

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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VANTAGE SPECIALTY CHEMICALS, INC.,  
Petitioner,

v.

CARGILL, INC.,  
Patent Owner

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IPR2023-00589  
Patent 11,248,245

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Record of Oral Hearing  
Held: June 11, 2024

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Before SHERIDAN K. SNEDDEN, TIMOTHY G. MAJORS, and  
MICHAEL A. VALEK, *Administrative Patent Judges*.

IPR2023-00589  
Patent 11,248,245

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The above-entitled matter came on for hearing on June 11, 2024, commencing at 2:00 p.m., at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia.

P R O C E E D I N G S

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JUDGE MAJORS: Thank you for being patient. I was having a computer issue earlier, so apologies for that. We'll start in just a moment. Okay. We're here for the final oral hearing in IPR 2023-00589. We're on the record. The hearing is open to the public. I know that there is some confidential information in the record here. I'll talk about that a little bit more in terms of how we might want to handle if we need to get into that information in any depth.

The petitioner in this case is Vantage Specialty Chemicals, Inc., and the patent owner is Cargill, Inc. Why don't we go ahead and start with Petitioner and introduce counsel and who's going to be presenting today.

MR. LUCAS: Good afternoon, Your Honors. Eric Lucas from A&O Shearman on behalf of Petitioner Vantage. With me at counsel table is Thomas Makin, David Cooperberg, and Peter Fitzgerald, our trial graphics consultant.

JUDGE MAJORS: Thank you, everyone. Mr. Lucas, are you going to be doing most of the presenting today?

MR. LUCAS: Yes, Your Honor.

JUDGE MAJORS: Okay. And I'll just note briefly, I did see the LEAP practitioner request, and so Petitioner will get an additional 15 minutes on top.

MR. LUCAS: Thank you, Your Honor.

JUDGE MAJORS: Okay. Patent owner.

MR. KANE: Good afternoon, Your Honors. Michael Kane,

1 Fish & Richardson on behalf of Patent Owner Cargill Inc. With me at  
2 counsel table are my colleagues Grace Kim and Casey Kraning. We also  
3 have colleagues Karl Renner and Ahmad Davis, as well as Jeff Skelton and  
4 Cass Dottridge from Cargill.

5 JUDGE MAJORS: Great. Welcome, everyone. Today you  
6 have me, Judge Majors. Off to my right here is Judge Snedden, and on the  
7 screen behind me here to the left is Judge Valek, who is participating  
8 remotely.

9 As set forth in our May 8th order setting the oral hearing, each  
10 side will have 60 minutes with the proviso that I just mentioned about the  
11 LEAP practitioner getting an additional 15 minutes. Would the parties like  
12 to reserve any rebuttal time?

13 MR. LUCAS: Yes, Your Honor. I'd like to reserve 15 minutes.

14 JUDGE MAJORS: Okay. And Patent Owner?

15 MR. KANE: Also 15 minutes, Your Honor.

16 JUDGE MAJORS: Okay. Thank you. A few housekeeping  
17 matters as far as time is concerned. We'll try to keep time up here and set it  
18 on the clock behind us, but I suggest folks just watch that for yourselves as  
19 well. When you're speaking, please identify yourself. Just quickly your  
20 name so that the record is clear. I don't think that there will be much talking  
21 over each other today but try to avoid that if we can.

22 If you are going to be navigating through pages of your  
23 demonstratives, it's helpful if you can identify the page of the demonstrative  
24 on which you're going to be discussing.

25 Similarly, if you're going to be pointing to evidence in the  
26 record, it's also helpful if you'll cite where the evidence is, the page number,

1 and just give us a few beats to go find that. We have the entire record  
2 available to us. And I would ask that counsel please remain after the hearing  
3 is concluded, just briefly, so if the Court reporter has any questions, you can  
4 help spelling and other things of that matter.

5 Now, as to the question of confidentiality, this was set forth in  
6 the order setting, the oral hearing, but if there is a way, since this is open to  
7 the public and I understand that there are people listening in on the public  
8 line, if there is a way to make your points without divulging the confidential  
9 information, that would be preferred. But if that's not possible, we'll do what  
10 we have to do to get into it.

11 But, again, since we do have the record, it's possible that you  
12 may be able to refer to matters at a level of generality that really doesn't  
13 require getting into the substance. And with all that, Petitioner, you have the  
14 burden of proof. You can put your time up here. We'll start in just a  
15 moment.

16 JUDGE MAJORS: Whenever you're ready, you may begin.

17 MR. LUCAS: Good afternoon, Judge Snedden, Judge Majors,  
18 Judge Valek. Eric Lucas from A&O Shearman on behalf of Petitioner  
19 Vantage. If we could move to Slide 2. In this IPR, Vantage challenges the  
20 patentability of Claims 1, 2, 3, and 5 of the '245 Patent, which was filed  
21 December 19th, 2014, and was originally assigned to International Flora  
22 Technologies, or Floratech. Patent Owner Cargill acquired Floratech a few  
23 years ago.

24 At a high level, independent Claim 1 is directed to a  
25 transesterification process that results in an increase in oxidative stability, or  
26 OSI. The claim requires, first, providing a feedstock comprising jojoba wax

1 esters and 20 to 50 percent by weight hydrogenated jojoba wax esters. I may  
2 refer to that today as the feedstock limitation.

3           Second, the claim requires contacting the feedstock with a  
4 lipase in order to transesterify the jojoba wax esters in the feedstock to form  
5 a transesterified product. The resulting increase in oxidative stability is  
6 claimed in the wherein clause in the last limitation of the claim, Limitation  
7 1C. The challenged dependent claims, 2, 3, and 5, limit what additional  
8 material can be in the feedstock.

9           Moving to Slide 3. I plan on focusing today on the first two  
10 grounds of unpatentability. Each of Trans Isomers 2, or TI2, and Cummings  
11 teaches the claimed transesterification process, except they don't teach using  
12 a lipase enzyme as claimed to catalyze the transesterification reaction. We'll  
13 use the copy of TI2 that's included in Exhibit 1014 that's more legible than  
14 the copy that's in 1006. And Cummings is Exhibit 1004.

15           It's Petitioner's position that each of those references would  
16 have taught a person of ordinary skill in the art the claim feedstock  
17 limitation because the composition of the feedstock can be derived through a  
18 simple equation, but to the extent the Board doesn't find that persuasive, the  
19 claim feedstock percentages are explicitly shown in Sessa, which is Exhibit  
20 1009.

21           Xu, on the right side of the screen, teaches that lipases can be  
22 used to catalyze reactions that were historically catalyzed by chemicals, and  
23 that there are benefits to using enzymatic catalysts, like a lipase. In other  
24 words, Petitioner has used Xu to supply the TGL or lipase catalyst that is  
25 missing from TI2 and Cummings. Xu is Exhibit 1008.

26           Patent Owner makes three main responsive arguments. First,

1 that neither TI2 nor Cummings teaches the wherein result of an increased  
2 OSI from claimed feedstock to transesterified product. Second, that the  
3 improvement in OSI that is disclosed in TI2 and Cummings was due to an  
4 undisclosed tocopherol addition rather than the transesterification reaction  
5 itself.

6 And third, that despite Xu's teachings that there are benefits to  
7 using a lipase to catalyze various reactions, including transesterification. A  
8 POSITA would not have been motivated to use a lipase with any non-  
9 triglyceride, let alone jojoba oil.

10 As I will discuss today, the references clearly attribute the  
11 increase in OSI to the transesterification reaction itself. Patent Owner's  
12 tocopherol arguments are a red herring and Patent Owner's triglyceride  
13 argument with respect to lipases is entirely without basis. Further, applicant  
14 has repeatedly admitted under oath the steps of the claim process, which are  
15 in Petitioner's obviousness combinations, will always inherently produce the  
16 wherein OSI result.

17 Move to Slide 4. First, with respect to Trans Isomers 2, TI2  
18 continues the discussion started in Trans Isomers 1 regarding using  
19 transesterification to prepare trans isomer-free ingredients for use in  
20 cosmetics. TI2 specifically teaches the transesterification of jojoba oil and  
21 hydrogenated jojoba oil to achieve jojoba esters.

22 We have on the screen Figure 4 from TI2 and a description of  
23 that figure from Exhibit 1014, pages 5 and 6. Figure 4 shows a reaction  
24 between jojoba oil and fully hydrogenated jojoba oil, which are the two  
25 claimed feedstock ingredients. TI2 says, quote, jojoba esters are an ideal  
26 model to use to demonstrate the trans-free inert-esterification reaction and

1 the properties of the resulting components. That's on page 5 of Exhibit  
2 1014.

3           Moving to Slide 5. Before I discuss TI2's teachings with  
4 respect to the claimed feedstock, one overarching point here I'd like to make  
5 with respect to double bonds, iodine values, and hydrogenation. It's  
6 uncontested that a POSITA would have known that iodine values can be  
7 used to determine the degree of unsaturation, or the number of double bonds,  
8 in fats, oils, and waxes. And that the average number of double bonds  
9 essentially does not change during transesterification.

10           It's further uncontested that fully saturated, or fully  
11 hydrogenated jojoba oil contains no double bonds, and has an iodine value  
12 of nearly zero because there are no double bonds that are capable of  
13 absorbing iodine. While fully unsaturated jojoba oil, by contrast, contains  
14 double bonds that can absorb iodine, and therefore has higher iodine values.  
15 Thus, the weight percentage of hydrogenated jojoba oil in the feedstock  
16 varies inversely with the iodine value number.

17           So, looking at Slide 5. In Table 2, TI2 teaches five separate  
18 jojoba esters, each having different iodine values and OSI values. From the  
19 Table 2 in TI2, and from known measured iodine values of jojoba, and the  
20 fact that hydrogenated jojoba oil is nearly zero, a POSITA would have  
21 understood that TI2 teaches the feedstock limitation of the claim.

22           As Petitioner's expert, Dr. Rockstraw explained, a POSITA  
23 would have been able to derive a simple formula to calculate the weight  
24 percentage of the hydrogenated jojoba oil in the feedstock. That formula is  
25 on the top right of this demonstrative, taken from Exhibit 1003, paragraph  
26 140. It's been annotated to account for Dr. Rockstraw's admitted sign error,

1 so you can see a red negative sign in the denominator on the right side of the  
2 equation there.

3 So, Dr. Rockstraw used this equation and the iodine values he  
4 had from Table 2, and also the known iodine values, and he plugged them  
5 into his formula, and he came up with the numbers that we've reproduced on  
6 the right side of the slide here, in the column that says estimated  
7 hydrogenated jojoba oil content of feedstock, weight percentage. Those  
8 results are in paragraph 143 of Exhibit 1003, which is the declaration. We  
9 have pasted, of course, those values next to the corresponding jojoba ester,  
10 to which they relate.

11 Accordingly, TI2 teaches using feedstocks from nearly zero  
12 percent for the jojoba esters 15, to 100 percent for the hydrogenated jojoba  
13 esters, the jojoba esters 70, including 20 percent for jojoba esters 20, and  
14 approximately 30 percent for jojoba esters 30. Therefore, TI2 teaches the  
15 claimed feedstock range 20 to 50 percent, because it shows 20 and 30  
16 percent for jojoba esters 20 and jojoba esters 30.

17 Now, in the institution decision, Your Honors identified certain  
18 questions regarding the accuracy of Dr. Rockstraw's calculation. Each has  
19 been addressed by Dr. Rockstraw during the proceeding. First, Dr.  
20 Rockstraw admitted a sign-error typo in his weight percentage formula but  
21 explained that the results that he reported used the correct formula, not the  
22 one with the sign-error typo. That explanation is in his deposition, which is  
23 Exhibit 2046, pages 19 to 20, and also additional explanation of 137 to 138.

24 Second, Dr. Rockstraw explained that the iodine values of the  
25 component esters within each of the jojoba oil, hydrogenated jojoba oil, and  
26 the jojoba esters are not required because the iodine values of those

1 compositions themselves are known. That explanation is also in his  
2 deposition transcript, Exhibit 2046, pages 84 to 85.

3 Third, Dr. Rockstraw's calculations are not dependent on the  
4 trace presence of any reaction side products or the precise reaction yield  
5 because the number of carbon double bonds, the substantially determinative  
6 factor for the reactant and product iodine values, is conserved during the  
7 reaction. Thus, iodine value remains the same during the transesterification  
8 process, regardless of whether the process is taken to completion.

9 Moving to Slide 6. Dr. Rockstraw's method for calculating the  
10 weight percentage of hydrogenated jojoba wax esters in the feedstock is  
11 validated by the inventor's own data. I discussed in the previous slide Dr.  
12 Rockstraw calculated that the feedstock of the jojoba esters 20 reported in  
13 Trans Isomers 2 was made from a feedstock having approximately 20  
14 percent hydrogenated jojoba oil. He recorded the numbers as 21 to 21.8  
15 percent hydrogenated jojoba oil.

16 Those numbers align with what the inventor applicant, Mr.  
17 Addy, calculated during prosecution. He did an experiment where he  
18 created a feedstock of a 20 percent hydrogenated jojoba oil and 80 percent  
19 refined jojoba oil by weight, and he chemically and enzymatically  
20 transesterified it. And you can see that the iodine values range from 64 to --  
21 they're within the 64 to 70 range that's reported in TI2.

22 So, this validates both Dr. Rockstraw's calculation with respect  
23 to the jojoba 20 feedstock in TI2, as well as the fundamental premise  
24 underlying that calculation, that it's the number of double bonds that  
25 primarily impacts the iodine value number, not the particular distribution of  
26 esters with the jojoba oil composition, which doesn't change during

1 transesterification.

2                   This material that we reproduced on Slide 6 is from the  
3 prosecution history, which is Exhibit 1002 on pages 1075 to 1076, for the  
4 record.

5                   JUDGE MAJORS: Mr. Lucas, if I could ask a question about  
6 that.

7                   MR. LUCAS: Yes, Your Honor.

8                   JUDGE MAJORS: It seems to me that in reading the papers at  
9 this stage -- now Patent Owner may disagree and they'll have a chance to  
10 speak to this, but it didn't seem to me that they were certainly not arguing  
11 this feedstock composition limitation as vigorously as they did at the  
12 institution decision.

13                  And I would add, if it is in fact the case that jojoba ester 15 has  
14 very little or essentially no hydrogenated component, and jojoba ester 70  
15 has -- it's almost entirely the hydrogenated component, I think that's borne  
16 out some of the other evidence, Brown among others, then you have a  
17 situation where you have zero percent, or close thereto, as you're showing  
18 here on Slide 5, and nearly a 100 percent for jojoba ester 70, and then some  
19 amounts in between.

20                  MR. LUCAS: Yes, Your Honor.

21                  JUDGE MAJORS: And one might say, even if there might be  
22 holes that one might poke into in these equations, we have a situation where  
23 the overall range is known. We have Cummings, at least Cummings, telling  
24 us that the ratio of this hydrogenated component and the fully unsaturated  
25 component is sort of key to determining the properties of the composition.  
26 And I think we even, in our institution decision, citing Sessa and others said,

1 why isn't this a situation of routine optimization? And I didn't see the patent  
2 owner say anything responsive to that in their trial papers.

3 MR. LUCAS: Neither did I, Your Honor. I hope that that's  
4 conceded at this point, given the evidence that's been worn out, but I don't  
5 know if they'll get up and say otherwise today.

6 JUDGE MAJORS: Okay. But as I just explained, that's  
7 generally consistent with this argument that, although I understand that it's  
8 Petitioner's position that the specific IV calculations are accurate, or at least  
9 accurate enough to read on the limitations in question.

10 MR. LUCAS: Yes, but as Your Honor mentioned, even if there  
11 are questions with respect to the accuracy of the calculations, Sessa is the  
12 secondary reference that teaches specifically that claimed range.

13 We can move to Slide number 7, please. Trans Isomers 2  
14 teaches that transesterification increases oxidative stability. It explicitly  
15 states that Table 2, which shows OSI values, quote, illustrates the range of  
16 properties achievable through this interesterification process. That quote's  
17 on the top left column, page 6 of Exhibit 1014. I'd like to explain this  
18 teaching with respect to jojoba esters 30, which Dr. Rockstraw found to have  
19 been made from a feedstock comprised of approximately 30 percent fully  
20 hydrogenated jojoba oil.

21 Table 4 of TI2 shows that chemical transesterification of this  
22 feedstock leads to jojoba esters 30 reported in row one that has an iodine  
23 value of 58 and an OSI of 165 hours. And while TI2 does not explicitly set  
24 forth the OSI value for the jojoba esters 30 feedstock, it does report an OSI  
25 of 108 hours for a jojoba oil partial hydrogenate in row four, which has an  
26 iodine value of 49.

1           The uncontroverted facts and testimony established that this  
2   OSI of 108 must be the upper bound for the jojoba esters 30 feedstock based  
3   on two salient differences between the row four partial hydrogenate and the  
4   feedstock used to create the jojoba esters 30.

5           Dr. Rockstraw explained some of this in his deposition Exhibit  
6   2046 on pages 43 to 47. The first difference that he spoke about is in a  
7   percent hydrogenation. The row four jojoba oil partial hydrogenate has an  
8   iodine value that's significantly lower than that of the row one jojoba esters  
9   30. So, we know that the row four partial hydrogenate is more than 30  
10   percent hydrogenated.

11           Because a POSITA would have known that a greater level of  
12   hydrogenation, if anything, would lead to a higher OSI, a POSITA would  
13   have known that the OSI of the row four partial hydrogenate should be  
14   higher than the jojoba esters 30 feedstock OSI.

15           The second salient difference, as TI2 itself explains, is that  
16   there are some trans isomers created during the partial hydrogenation  
17   process that are not present in the feedstock mixture of pure and  
18   hydrogenated jojoba oil that's used to create jojoba esters 30. As Dr.  
19   Rockstraw explained in uncontested testimony, these trans isomer materials  
20   in the row four partial hydrogenate increase its OSI as compared to the  
21   jojoba esters 30 feedstock.

22           In short, because the differences between the row four partial  
23   hydrogenate and the feedstock used to create jojoba esters 30 row one, each  
24   tend to increase the OSI of the partial hydrogenate as compared to the jojoba  
25   esters 30 feedstock, a POSITA would have known that 108 OSI of the row  
26   four partial hydrogenate is an upper bound on the OSI of the feedstock for

1 the jojoba esters 30.

2 JUDGE MAJORS: Mr. Lucas, I think what I'm struggling with  
3 on this part of Petitioner's case is where this was explained, if at all, in the  
4 petition. I understand the point being made now, but when I go back to the  
5 petition, it's extremely high level. It points to this table and says, you may  
6 disagree with this, says in effect, a POSITA would understand that it's there.  
7 And I read the accompanying testimony as well, and there's no discussion  
8 around IV values for this table.

9 There's no discussion around the trans component. And that  
10 seems a bit problematic, given that our rules require that the claim be set  
11 forth with particularity in the petition.

12 MR. LUCAS: In the institution decision and in Patent Owner's  
13 response, questions were raised about this argument. And we are responding  
14 to those questions in that argument. And I would submit to Your Honors  
15 that, under the case law, such as *Rembrandt Diagnostics v. Alere*, 76F4,  
16 1376, specifically in 1384, Fed Circuit 2023, that case says, we've held that a  
17 reply may be proper if it's responsive and simply expands on previously  
18 raised arguments.

19 So here, we raised that the Table 4 shows an increase in OSI  
20 from feedstock to transesterified products. And we have explained that  
21 argument in greater detail, of course, throughout the proceeding and here  
22 today. That's also consistent with *Corephotonics v. Apple*, 84F4 990, for  
23 example 1009, another 2023 Fed Circuit case.

24 And again, I would submit that the testimony on pages 43 to 47  
25 of the Exhibit 2046, Dr. Rockstraw's deposition testimony, are supportive of  
26 this argument. May I move on now?

1 JUDGE MAJORS: Yes, thank you.

2 MR. LUCAS: If we could move to Slide number 8. Like TI2,  
3 Cummings also teaches the transesterification of jojoba oil and hydrogenated  
4 jojoba oil to achieve jojoba esters. Cummings's Exhibit 1004, on page 2, it  
5 reproduces a figure showing the reaction. It also explains, in this process,  
6 different ratios of unsaturated jojoba oil are combined with fully saturated  
7 jojoba oil and then intersterified.

8 If we could move to Slide 9. As he did with TI2, Dr.  
9 Rockstraw calculated the composition of the feedstocks of the jojoba esters  
10 in Cummings based on the item values shown in the equation in the slide.

11 And again, he came up with numbers based off of plugging in  
12 the known values, and the IVs mentioned in Cummings itself, you know,  
13 range from approximately zero, or near zero, to about a 100 percent for  
14 jojoba esters 70. And also, within the claimed range, specifically jojoba  
15 esters 20 and jojoba esters 30, having approximately 20 percent and again  
16 approximately 30 percent hydrogenated jojoba oil in the feedstocks.

17 If we could move to Slide 10. Like TI2, Cummings teaches  
18 that transesterifying the range of feedstocks comprising from near zero to  
19 near 100 percent hydrogenated jojoba wax esters achieves OSI values from  
20 greater than 100 hours up to approximately 675 hours. Cummings also  
21 provides that the OSI for a near zero hydrogenated feedstock, essentially the  
22 feedstock for jojoba esters 15, is 35 hours.

23 Therefore, Cummings teaches that the transesterification  
24 reaction increases oxidative stability in the jojoba esters 15 feedstock, for  
25 example, from 35 hours to greater than 100 hours.

26 Can we move to Slide 11? This teaching that transesterification

1 increases the oxidative stability of the primary claimed feedstock ingredient,  
2 jojoba oil, should be sufficient to teach increased OSI from  
3 transesterification for the specifically claimed feedstocks. The '245 Patent  
4 itself acknowledges that an increase in OSI from a jojoba oil only feedstock  
5 indicates that the transesterification has a positive effect on OSI. A  
6 transesterification of a zero percent feedstock is in fact the only teaching of  
7 increased OSI in the '245 Patent.

8 As explained In re Publicover, for example, the prior art cannot  
9 be held to a more difficult standard than the patent itself. Moving to Slide  
10 12.

11 JUDGE VALEK: Counsel, this is Judge Valek. I have a  
12 question about Slide 11 and the data that you have shown there. Doesn't this  
13 show that when you use a chemical catalyst, you actually get a negative  
14 result? It decreases the OSI. Whereas when you use the enzyme catalyst, it  
15 increases that. Isn't that somewhat inconsistent with your argument based  
16 upon Cummings?

17 MR. LUCAS: Well, Your Honor, Mr. Addy reported on one  
18 experiment here that he did and recorded in the specification. And for that  
19 one experiment, using a jojoba oil only feedstock, he got a small decrease  
20 that he recorded. I would submit that during the prosecution history, he did  
21 a chemically catalyzed reaction and an enzymatically catalyzed reaction on a  
22 20 percent hydrogenated jojoba wax ester feedstock. So, one within the  
23 claimed range, and he got an increase, albeit small.

24 So, I don't know exactly why there's a decrease shown here in  
25 Table 3, but with respect to the claimed feedstock as shown in the  
26 prosecution history, he got an increase, albeit small.

1 JUDGE MAJORS: Maybe we -- I'm sorry, Judge Valek, if you  
2 had a follow-up, please go ahead.

3 JUDGE VALEK: Yeah, just one short follow-up. But  
4 assuming the data here is correct, I don't think there's any evidence to the  
5 contrary, doesn't this data for the chemical catalyst in Table 3 of the '245  
6 Patent tend to undermine your argument that such transesterification  
7 processes will always increase the OSI?

8 MR. LUCAS: I don't believe it undermines either Cummings  
9 or Trans Isomers 2. And it always occurs with respect to -- the increase in  
10 OSI always occurs with respect to a lipase catalyzed reaction. And that's  
11 been admitted in the deposition testimony of Mr. Addy during the District  
12 Court case and also during the prosecution history. That's the inherency  
13 argument that I'll talk about in a few minutes.

14 So even if there is shown a small decrease here with respect to  
15 the chemically catalyzed transesterification in the patent, there's been  
16 admissions with respect to inherency that if you do it with a lipase, with a  
17 jojoba wax ester feedstock within the claim range, you're always going to  
18 get an increase of oxidative stability from the feedstock to the transesterified  
19 product.

20 JUDGE MAJORS: Petitioner doesn't dispute -- correct me if  
21 I'm wrong, Petitioner doesn't dispute that Cummings, standing alone at least,  
22 Cummings standing alone would be understood as using a chemical catalyst  
23 at the time, right? It's not an enzyme that's described in that reference.

24 MR. LUCAS: We're not asserting that it's an enzyme catalyst.  
25 I think it's silent as to what the catalyst is, but --

26 JUDGE MAJORS: Maybe it makes sense at this point, if you

1 weren't going to already, to address this point about whether antioxidant  
2 addition is responsible for, or would have been understood as being  
3 responsible for the increased OSI observed in Cummings.

4 MR. LUCAS: Absolutely, Your Honor. If we could move to  
5 Slide 16. One of Patent Owner's main arguments in his certify, which Your  
6 Honor is previewing, that neither TI2 nor Cummings teaches the disclosed  
7 increase in OSI that's due to transesterification, but rather to the addition of  
8 tocopherols.

9 Now, the premise of that argument is suspect because  
10 Floratech's commercial products are called Floraesters, not jojoba esters. In  
11 fact, the Floraesters commercial products are composed of two ingredients,  
12 jojoba esters and tocopherols. That can be seen in Exhibit 2013, for  
13 example, which is a Certificate of Analysis for the Floraesters 20 product.  
14 And neither TI2 nor Cummings talks about the addition of tocopherols.

15 TI2, for example, explicitly states that Table 2, which shows the  
16 OSI values, quote, illustrates the range of properties achievable through this  
17 interesterification process.

18 Moving to Slide 17, Cummings has a whole section dedicated  
19 to the esters' oxidative stability, trumpeting that, quote, the whole esters  
20 demonstrate remarkable stability with OSI values of all jojoba esters greater  
21 than 100 hours and as high as 675 hours. The OSI of refined jojoba oil is  
22 around 35 hours. That's on page 2 of Exhibit 1004.

23 And on the left side of the screen, another quote from page 2  
24 says, the process results in jojoba esters engineered to deliver specific  
25 physical, functional, and chemical characteristics. And of course, oxidative  
26 stability is one of the characteristics that Cummings is talking about.

1           The only mention of tocopherols in Cummings at all is as an  
2 additional ingredient in a lipstick that already contains jojoba esters 30 and  
3 70. That's on page 3 of Exhibit 1004. You can see on the right side of the  
4 demonstrative, the red boxes around jojoba esters 30 and 70, and then the  
5 box around the tocopherols, which is an additional ingredient in that lipstick.

6           So clearly, Cummings knew how to recite tocopherols when  
7 they were actually an ingredient in something. Here, there's no mistake in  
8 what the references teach, but even if the references had made an error, the  
9 case law is clear that POSAs should consider the references for what they  
10 say, absent an error that's obvious from the face of the reference. That's In  
11 re Clark 420, Federal Appendix 994 at pages 998 to 99, a 2011 Federal  
12 Circuit case.

13           JUDGE MAJORS: Mr. Lucas, what about Exhibit 1028? I  
14 mean, the law of course also says that a skilled person reads the art in the  
15 context of everything else. And Patent Owner has taken the position -- they  
16 have their internal documents number 1, but then they cite this Exhibit 1028  
17 as well, and say, see, this is consistent with our position that a skilled artisan  
18 would know that it's these tocopherols being added that is producing the OSI  
19 increase.

20           MR. LUCAS: So, as Your Honor said, Patent Owner cites  
21 other documents, such as Exhibit 1028, to support the idea that the jojoba  
22 esters that are disclosed in the prior art, like TI2 and Cummings, have had  
23 tocopherols added to them to bring the tocopherol level up to 0.05 percent.  
24 But none of the references, even if they were -- the references like 1028 and  
25 the other references, the internal references that you're talking about, even if  
26 they were relevant, indicate whether or not the tocopherols would have been

1 added prior to OSI testing in Cummings and TI2.

2               So, with respect to Exhibit 1028, it disproves Patent Owner's  
3 theory because it points out that prior to the reaction, the natural jojoba  
4 esters already have 0.05 percent tocopherols included in them. That's on  
5 page 6 of Exhibit 1028, as shown on the right side of the demonstratives,  
6 Slide 18.

7               So even if the patent owner had topped up the tocopherols to  
8 the original feedstock's levels, as a matter of logic, that wouldn't explain any  
9 increase in the oxidative stability.

10              JUDGE MAJORS: I suppose unless you -- the patent speaks to  
11 this notion of the chemical catalyzed process and somehow removing or  
12 destroying the tocopherols, hence a need to replace them after the fact.  
13 What does Petitioner say about that? Does my question make sense? In  
14 other words, if transesterification using sodium methyllate reduces or harms  
15 the existing antioxidants, you need to add them after the fact. How does that  
16 not support, or how do those facts play into this position of Patent Owner  
17 that it's really the tocopherols that are responsible for the OSI increase?

18              MR. LUCAS: I guess I would refer Your Honor back to what  
19 Cummings and TI2 explicitly say, which is they're trumpeting this reaction  
20 as something that's beneficial to these cosmetic ingredients. And it doesn't  
21 say anything about the addition of tocopherols. And so even if the patent in  
22 this one example shows a slight decrease in oxidative stability and talks  
23 about a destruction of tocopherols due to chemical catalysis, the references  
24 on which we're relying don't talk about tocopherols at all. And so, they say  
25 if you do this reaction, the OSI increases.

26              JUDGE MAJORS: Did Dr. Rockstraw, did he offer any

1 testimony on this? Because as I gather Patent Owner's position, they say Dr.  
2 Schultz says that a skilled artisan would know that there's this post-  
3 processing and addition of antioxidants. They cite some documents that  
4 they say supports their position. Did Dr. Rockstraw address that in any  
5 declaration or deposition?

6 MR. LUCAS: That specific point, I don't recall that he  
7 addressed that. I think that the documents that we've identified address that  
8 point. For example, what I just explained with respect to this relationship  
9 analysis that show that the commercial Floraesters products have  
10 tocopherols added in them. But jojoba esters as a class of material don't  
11 necessarily have tocopherols added to them.

12 JUDGE MAJORS: You can continue.

13 MR. LUCAS: If we could move to Slide 19, please. Even if  
14 TI2 and Cummings are found not to teach the claimed increase in oxidative  
15 stability, applicants swore to the PTO during prosecution and inventor Addy  
16 swore under oath in a related District Court case that the increase in OSI is  
17 automatic or inherent when performing a lipase-catalyzed ester-ester  
18 exchange of jojoba oil using the process of Claim 1, which is the same  
19 process that's disclosed in the asserted prior art combinations in this IPR.  
20 The Slide in the following two slides walks through those admissions.

21 So first, to avoid the Section 112 rejection that the patent didn't  
22 teach how to achieve increased OSI, the applicant stated that the increase  
23 presided in the wherein clause was not a limitation incorporating unrecited  
24 claim limitations, but an inherent result of performing the first 3 steps of the  
25 then pending claims. This is on page 396 of Exhibit 1002, the prosecution  
26 history.

1           Moving to the next slide, Slide 20. The applicant later  
2 reasserted this inherency theory, explaining that the increased OSI was  
3 inherent so long as a jojoba feedstock was used. Pages 948 to 949 of Exhibit  
4 1002 says, the claimed, in effect, of increasing OSI is a feedstock-dependent  
5 effect, and thus the use of a proper feedstock is what is involved in causing  
6 the observed increase in OSI.

7           And of course on the next slide, Slide 21, during Mr. Addy's  
8 deposition in a District Court case, it could have been more clear that the  
9 wherein clause is inherent from the very steps required by Claim 1, which  
10 are disclosed in Petitioner's obviousness combinations.

11           He was asked, question, if you do the providing, contacting,  
12 and transesterifying activities that are specified in the claim prior to the  
13 wherein step, do you automatically get an OSI result, the OSI result in that  
14 wherein step? And he answered, if you do the reaction, you will get an  
15 increased oxidative stability from the feedstock. He reiterated that point a  
16 few lines later. This is his deposition transcript, Exhibit 1043, line 60 --  
17 page 60 to 61.

18           Moving to Slide 22. As alluded to earlier, even if Cummings  
19 and TI2 are found not to disclose the claimed feedstock percentages, or if  
20 that's not conceded already, Sessa explicitly teaches that limitation. Sessa  
21 discloses the claimed percentages of hydrogenated jojoba wax ester  
22 feedstocks in experimenting with a range of different feedstock percentages  
23 to adjust the properties of the resulting esters.

24           Sessa's Exhibit 1009, the very first sentence says, series of wax  
25 ester blends was constructed by transesterifying native jojoba oil with 50 to  
26 500 grams per kilogram, completely hydrogenated jojoba wax esters. And

1 additional relevant evidence here is Dr. Rockstraw's declaration, Exhibit  
2 1003, paragraph 110, where he converts the content into the weight  
3 percentage. That's on the right side of this demonstrative.

4 Moving to Slide 23 and Xu, Exhibit 1008 is an article providing  
5 an overview on the emerging use of enzymes, including lipases, to modify  
6 lipids, including bio esterification/transesterification.

7 JUDGE MAJORS: Mr. Lucas, I'm sorry to -- can I go back just  
8 one second? I want to get Petitioner's position on the Sessa argument. And  
9 for Patent Owner's part, I mean, listen to this too because I want to try to  
10 understand your position better because I found it a little bit confusing.

11 As to what Sessa is allegedly disclosing, I mean, there's one  
12 view, I suppose, where you look at Sessa and you say it's disclosing you've  
13 got refined or pure jojoba oil, and then you transesterify it with blends  
14 between, what is it, 5 to 50 percent.

15 I think one might say that's a fair reading of the first sentence of  
16 Sessa, but then they point to some disclosure in the materials and methods,  
17 and I just wasn't quite sure what they're trying to argue there, and I wanted to  
18 get Petitioner to read on -- is it that they're saying that there was a previous  
19 transesterified product, and it's that product that is then being mixed together  
20 with jojoba oil? And if you can't speak to it, that's fine, but I just wanted  
21 you to have a chance to state your position on it, because I will admit I found  
22 it a little bit confusing.

23 MR. LUCAS: I'll confess that I don't fully understand that  
24 argument as well. I think that this first sentence is abundantly clear in Sessa,  
25 and that it clearly teaches the claimed feedstock ranges. So, I'm not sure  
26 exactly what the argument is saying.

1 JUDGE MAJORS: Okay. We'll let them speak to it. I'm sorry  
2 to interrupt you. Go ahead.

3 MR. LUCAS: We're on Slide 23 with respect to Xu. Xu is an  
4 article providing an overview on the emerging use of enzymes, including  
5 lipases, to modify lipids, including by interesterification and  
6 transesterification. The reactions taught in Cummings and TI2, as well as  
7 other mechanisms. Those teachings can be seen, for example, in pages 289  
8 to -- 289 and also 298 to 299 of Exhibit 1008. For example, Xu says  
9 interesterification, which includes acidolysis, alcoholysis, and ester-ester  
10 exchange, is possible with the catalysis of lipases.

11 It says, thus chemical interesterification which has been  
12 implemented in the current industry can be fully replaced. It also says  
13 enzymatic ester-ester exchange is an alternative to the chemical method for  
14 the modification of fats and oils.

15 Now on Slide 24, Xu identifies many strong and uncontested  
16 reasons to try lipase enzymes as a substitute for a chemical catalyst taught in  
17 Cummings and TI2. These include for example, very interesting products  
18 and potential market demands, the improvement of product quality,  
19 reduction of enzyme price and balanced economy, simple processes and low  
20 investment, environmental considerations, customer perception and  
21 marketing strategy, know-how preparation, and technology takeover control.  
22 It also mentions energy efficiency. This is Exhibit 1008, pages 289 and 301  
23 as well.

24 Patent Owner's response to these persuasive teachings is that  
25 the exemplary lipid modification reactions later discussed in Xu do not  
26 include a jojoba oil ester-ester exchange reaction, but this is beside the point

1 Xu does not restrict the above motivations to the specific lipids or the  
2 specific lipid modification reaction.

3 Moving to Slide 25.

4 JUDGE MAJORS: I have a quick question, Mr. Lucas.

5 MR. LUCAS: Yes, Your Honor.

6 JUDGE MAJORS: I don't think there's any dispute that these  
7 claims pertain to or encompass the ester-ester exchange reaction that most of  
8 the parties are talking about in their papers, right?

9 MR. LUCAS: Well, actually we don't believe that the claims  
10 are limited to ester-ester exchange, but even if they were, it doesn't matter  
11 because TI2 and Cummings both disclose ester-ester exchange type  
12 transesterification.

13 JUDGE MAJORS: Got you. There's no claim construction that  
14 people have been arguing about here, but just so the record's clear, Petitioner  
15 is not suggesting that the claims are necessarily limited to the ester-ester  
16 variety of transesterification.

17 MR. LUCAS: Correct.

18 JUDGE MAJORS: Okay.

19 MR. LUCAS: By virtue of -- well, the dependent claims, for  
20 example.

21 JUDGE MAJORS: Right, because at least one of the dependent  
22 claims says that the feedstock doesn't have free fatty alcohols.

23 MR. LUCAS: Correct. We're on Slide 25. In his Patent  
24 Owner response, Patent Owner broadly asserted that a POSITA would not  
25 have expected lipases to catalyze anything but triglyceride reactions. At the  
26 very beginning of his Patent Owner response, it stated, quote, lipases are

1 enzymes that prior to the '245 Patent, were known to be specific to  
2 triglycerides. It's on page 2 of its report. It made similar bold arguments on  
3 pages 12, 15, and 31 of its Patent Owner response.

4 None of the references that Patent Owner or Dr. Schultz relied  
5 on in the Patent Owner response actually said that lipases could not be used  
6 to transesterify non-triglycerides. Just because a reference talks about  
7 lipases being used with triglycerides, doesn't support the proposition that  
8 lipases can't be used to catalyze other reactions. Patent Owner made that  
9 outright protocol.

10 On Slide 26, Petitioner showed that through the evidence cited  
11 here in subsequent slides, that Patent Owner is completely incorrect about  
12 lipases being specific to triglycerides. Hills, for example, Exhibit 1033 from  
13 2003 timeframe, establishes that lipases were, quote, well known to catalyze  
14 hydrolysis, esterification, and transesterification reactions on a wide range of  
15 substrates, not just on triglycerides.

16 It states that as well as hydrolyzing their natural substrate  
17 triglycerides, this group of enzymes are very versatile, and that lipases have  
18 broad substrate specificities and can thus catalyze conversions with many  
19 other non-glycerol-based compounds, and that many alcohols other than  
20 glycerol can be used as substrates for lipases. That's page 601 of Hills  
21 Exhibit 1033.

22 JUDGE VALEK: Counsel I have a question about Exhibit  
23 1033. Is jojoba oil an alcohol?

24 MR. LUCAS: Jojoba oil is a wax ester.

25 JUDGE VALEK: Okay. So, this says many alcohols other  
26 than glycerol. So, would that include jojoba oil if it's a wax ester as opposed

1 to an alcohol?

2 MR. LUCAS: So, Hills rebuts the point that non-triglycerides  
3 could be used -- that lipases could be used to transesterify non-triglycerides  
4 specifically.

5 JUDGE VALEK: All right. So, it says that other alcohols  
6 besides glycerol, so other alcohols. I guess glycerol has three alcohols, so  
7 mono-alcohols, di-alcohols, they can be used as substrates. But this doesn't  
8 say that something like jojoba oil, which is a wax ester, I guess, that that  
9 could be used, correct?

10 MR. LUCAS: I don't believe Hills mentions jojoba oil  
11 specifically, but it does say in the last sentence here on this demonstrative,  
12 reactions can be carried out on the complete range of carboxylic acids from  
13 acetic acid to greater than C20 fatty acids.

14 JUDGE MAJORS: So, I suppose the follow-up to that is, is  
15 jojoba oil considered a carboxylic acid or a C20 fatty acid?

16 MR. LUCAS: May I have a moment to consult with my --

17 JUDGE MAJORS: Yeah. Counsel --

18 MR. LUCAS: --more experienced counsel?

19 JUDGE MAJORS: You're welcome to help.

20 MR. LUCAS: Yeah, so esters are alcohols and fatty acids.

21 JUDGE MAJORS: Combined into a new molecule?

22 MR. LUCAS: Yeah. So we would argue that there's sufficient  
23 application based off of that in Hills.

24 JUDGE VALEK: Okay. So, I guess the answer to Judge  
25 Majors' question was yes. And so, my follow-up question is going to be  
26 where is the evidence in the record of that?

1 MR. LUCAS: Of what, Your Honor? I'm sorry. That jojoba  
2 wax esters are a combination of both acids and alcohols?

3 JUDGE VALEK: That it can be considered to be within the, I  
4 guess, the class of compounds that are referred to in the last sentence that  
5 you have quoted here from Exhibit 1033 on Slide 26.

6 MR. LUCAS: May I address that point on rebuttal, Your  
7 Honor? I'm not sure I have an answer at my fingertips at the moment.

8 JUDGE VALEK: Certainly, counsel.

9 MR. LUCAS: Again, the Hills reference and also the Lei  
10 reference that's on this slide, Exhibit 1035, are being used to specifically  
11 rebut the point that was made in the Patent Owner response that lipases are  
12 enzymes that prior to the '245 Patent, were known to be specific to  
13 triglycerides. And so --

14 JUDGE MAJORS: I thought the Lei reference is not prior art.

15 MR. LUCAS: The Lei reference is not technically prior art. It  
16 rebuts the point that the -- that a POSITA would not have been -- would not  
17 have known to use a lipase with non-triglycerides.

18 JUDGE MAJORS: I don't understand. Either it's prior art or  
19 it's not. And you may say it reflects on the lack of unexpectedness relative  
20 to the result, but that's different than the prima facie showing of a reason for  
21 a skilled person to do the reaction.

22 MR. LUCAS: Sure. I think what Your Honor is alluding to is  
23 that Patent Owner's main response to Lei is that the Board would commit  
24 legal error by relying on it because it's not prior art. And my response to  
25 that would be that we're not relying on Lei as prior art. We're using it to  
26 show that this argument that a POSITA would have had no motivation to use

1 a lipase because a POSITA would have thought that lipases could not be  
2 used to transesterify jojoba wax esters is not a credible argument.

3 The researchers in Lei were conducting experiments prior to the  
4 filing of the '245 Patent. You know that because the paper was accepted  
5 prior to the filing date of the '245 Patent, even though it wasn't published  
6 until after that. And so, you can consider that for the rebuttal point and also  
7 as simultaneous invention evidence.

8 JUDGE VALEK: So, counsel, are you saying that the  
9 understanding of the authors or the inventors of the Lei reference is  
10 representative of what a POSITA would understand at the relevant time  
11 frame?

12 MR. LUCAS: Yes.

13 JUDGE VALEK: But if Lei is not prior art, how can we rely  
14 upon it for that purpose? It may well be that the Lei inventors were  
15 unusually prescient.

16 I don't understand how you can say that something that's not  
17 prior art demonstrates what one of skill in the art would understand at the  
18 relevant time.

19 MR. LUCAS: Again, Lei is not expressing that there's any  
20 surprise with respect to using a lipase to catalyze jojoba wax esters. And so,  
21 the fact that it's not technically prior art because it was published three days  
22 after the filing date of the '245 Patent is less relevant because you can  
23 consider this evidence under -- with respect to motivation and combined.  
24 Under the obviousness analysis, you can consider simultaneous invention.  
25 You can also consider it as a rebuttal point to the argument that someone at  
26 this time frame would not have known to use a lipase to catalyze a reaction

1 transesterifying jojoba wax esters.

2           The folks in Lei, they did this experiment actually doing a  
3 transesterification reaction catalyzed by a lipase, in September -- at least as  
4 of September when it was received for publication.

5           JUDGE VALEK: But again, that would require us to assume  
6 that the understanding of the Lei authors is representative of the  
7 understanding of a POSITA even though Lei wasn't publicly available as of  
8 that time.

9           MR. LUCAS: Yes.

10          JUDGE VALEK: Correct?

11          MR. LUCAS: Yes.

12          JUDGE VALEK: Okay. I understand your position.

13          JUDGE MAJORS: Just one more question, Mr. Lucas.

14          MR. LUCAS: Yes, Your Honor.

15          JUDGE MAJORS: Put Lei to the side for a moment.

16          MR. LUCAS: Okay.

17          JUDGE MAJORS: Is there any prior art example of a  
18 transesterification reaction? An example. And I'm not -- I understand your  
19 position the teachings are broader, but is there any example out there that we  
20 can point to in the record where a triglyceride was not involved in the  
21 reaction?

22          MR. LUCAS: Yes, Xu, Exhibit 1008.

23          JUDGE MAJORS: Where?

24          MR. LUCAS: Includes examples of non-triglycerides being  
25 reacted on -- through catalyzed by a lipase.

26          JUDGE MAJORS: Where? Is that Table 3?

1 MR. LUCAS: Yes.

2 JUDGE MAJORS: Where you're pointing?

3 MR. LUCAS: I believe it is Table 3. There are non-  
4 triglycerides listed in Table 3 which have that reaction.

5 JUDGE MAJORS: And how do we relate that? As I  
6 understand that table, that relates to an esterification reaction. How do we  
7 relate that reaction in specific to the ester-ester exchange that's at issue in  
8 this case?

9 MR. LUCAS: I think that that's still robust the broad point  
10 about lipases not being known to catalyze trans reactions of this nature.  
11 Like you said, this is an esterification reaction, so it's different. But it's still  
12 of that same nature. And there are other examples, I believe, that we have in  
13 the prior art of transesterification reactions.

14 JUDGE MAJORS: But if I could just interject again, if I  
15 understand it, if I have jojoba ester and hydrogenated jojoba ester, it requires  
16 at least two things, right? I have to break the molecule down so I can  
17 separate off the lipid subparts, and then I've got to synthesize it back  
18 together, okay? So that's the reaction that we're talking about that's claimed.  
19 And if we have with Xu, I'm sorry if I'm mispronouncing that, if we have  
20 arguably esterification or the synthesis of a molecule, how does that teach  
21 the entire reaction mechanism that's involved in these claims?

22 MR. LUCAS: May I consult with counsel Your Honor?

23 JUDGE MAJORS: Sure.

24 MR. LUCAS: I suppose my response with respect to Xu is that  
25 Cummings and TI2 teach the ester-ester exchange transesterification  
26 reaction. And Xu supplies the teaching of a lipase to substitute for the

1 chemical catalyst. And we admit we don't have an anticipatory reference  
2 here. So that's not what we're arguing. We're arguing for an obviousness  
3 combination where you have those two references showing the ester-ester  
4 exchange transesterification and Xu teaching a lipase with motivations  
5 regarding energy efficiency, environmental considerations, et cetera.

6 If we could move to Slide 27. So faced with the conclusive  
7 evidence that the broad statements in its Patent Owner response were not  
8 correct with respect to lipases and non-triglycerides, Patent Owner generally  
9 shifted its approach in its server reply to more narrowly phrase its  
10 motivation and combined arguments.

11 Stated, for example, on page 17 of its server reply, at the time  
12 of the invention, lipase-catalyzed ester-ester exchange specifically was  
13 believed to require a glycerol backbone to interact with the lipase's catalytic  
14 triad and ester chains of no more than 18 carbons, whereas jojoba fatty acid  
15 carbon chains were as long as 20 to 22. But as previously stated, lipases  
16 were known not to be limited to glycerol-containing substrates and in fact  
17 were known to work on fatty acid carbon chains longer than 18.

18 On Slide 28, for example, the very reference that Patent Owner  
19 relies on for the imagined 18 carbon limit, Exhibit 2063, directly refutes that  
20 assertion, stating instead that lipases accept esters as long as C22. That's on  
21 page 2 of Exhibit 2063. And the Hills reference that we looked at before,  
22 Exhibit 1033, page 601, says that reactions can be carried out on greater than  
23 C20 fatty acids.

24 Moving to Slide 29. In its server reply, Patent Owner even  
25 more narrowly asserted that a POSITA would have had no motivation or  
26 expectation of success in using a lipase to catalyze an ester-ester exchange

1 on jojoba wax esters.

2 Now, if we move to Slide 30, lipases were known to  
3 specifically cleave jojoba esters, which directly refutes Patent Owner's  
4 assertion that a POSITA would not have believed this possible due to the  
5 differences between triglyceride and jojoba molecules. For example, the  
6 prior art shows that lipases were known to catalyze jojoba aminolysis  
7 reactions and even jojoba intraesterification exchanges between jojoba esters  
8 and jojoba oil.

9 JUDGE MAJORS: How do we know that either of those two  
10 reactions are in any way analogous to the reaction that's claimed?

11 MR. LUCAS: They both involve the cleaving of jojoba.

12 JUDGE MAJORS: Okay. Anything more?

13 MR. LUCAS: Aminolysis is one of the reactions that's  
14 included in the parenthetical, sometimes referred to as interesterification.  
15 So, it's a class of reactions that is similarly named, for example, and I think  
16 that the reason is because of the cleaving of the esters.

17 JUDGE MAJORS: Did Dr. Rockstraw provide any testimony  
18 on that point?

19 MR. LUCAS: No.

20 JUDGE VALEK: Counsel, I have a follow-up. Were you able  
21 to elicit any testimony on cross-examination of Patent Owner's expert that  
22 would bear on that inquiry?

23 MR. LUCAS: May I reserve my response on that for rebuttal?  
24 I can't think off the top of my head, I do not.

25 JUDGE VALEK: Yes.

26 MR. LUCAS: So, with respect to aminolysis, this 1996 article

1 by De Zoete, Exhibit 1038, taught the use of Novozym 435, which is a lipase  
2 cited for use in the methods of the '245 Patent, to cleave jojoba esters in the  
3 presence of ammonia to form fatty acid amides and alcohols. That's on  
4 pages 347 and 348 of De Zoete. And in 2008, Cosmetic Ingredient Review  
5 Report, Exhibit 1028, on page 4, that's the exhibit that talks about the  
6 enzymatic intraesterification of jojoba oil. Page 4 of Exhibit 1028.

7 Moving to Slide 31, that a person of ordinary skill in the art  
8 would have no reservations about using a lipase to catalyze ester-ester  
9 exchange using jojoba oil. It's further confirmed by Lei, which we spoke  
10 about before, Exhibit 1035.

11 Lei is a research paper accepted for publication prior to the '245  
12 Patent filing date, published just three days later. It reports on the use of two  
13 lipases, including Novozym 435 and Lipozym RMIM, two that are  
14 mentioned in the '245 Patent, to catalyze the ester-ester exchange  
15 transesterification of jojoba oil and ethyl acetate, another ester, to produce  
16 esters for the cosmetic industry, pages 630 to 633 of Exhibit 1035.

17 Notably, Lei never characterizes the ability of lipases to  
18 catalyze jojoba transesterification as unexpected, and it refers to both jojoba  
19 esters and ethyl acetates as substrates. The purpose of the research paper  
20 was to compare the two lipases to see which one worked better, not to  
21 determine whether it worked at all.

22 Moving to Slide 32 and the dependent claims, Patent Owner  
23 does not argue that a POSITA would have expected or concluded that any  
24 other feedstock ingredients would be present or required in Cummings, TI2,  
25 or Sessa.

26 The references unequivocally describe feedstocks as mixtures

1 of jojoba oil and hydrogenated jojoba oil, nor does Patent Owner provide  
2 any explanation for why a POSITA would ignore the teachings of the  
3 identified prior art and conclude that the particular excluded compounds of  
4 claims 3 and 5, for example, would actually be present.

5           On Slide 33, with respect to secondary considerations, there are  
6 essentially three categories that Patent Owner raised as unexpected,  
7 surprising results, copying, and the age of the prior art. We submit that each  
8 of those fails.

9           Patent Owner's argument that OSI increase was surprising is  
10 irrelevant. It provides no evidence that an OSI decrease would have been  
11 expected in enzymatic ester-ester exchange transesterification. Moreover,  
12 Patent Owner has admitted, as I explained a few minutes ago, that the  
13 claimed enzymatic ester-ester exchange inherently results in increased OSI.  
14 And of course, purportedly newly discovered results of known processes  
15 directed to the same purpose were not factful in Bristol Meyers case.

16           Further, given the unrebutted and independent reasons for using  
17 a lipase recited in Xu, for example, the environmental considerations or the  
18 simplicity of the process, it would have been obvious to try using a lipase to  
19 catalyze the ester-ester exchange transesterification reactions that are set  
20 forth in Cummings and TI2, regardless of any expected OSI improvement.

21           Patent Owner's copying allegations are fairly flawed as well  
22 because they never established that any product, either Cargill's or  
23 Vantage's, was made by the patented process. It doesn't establish that it  
24 makes a copied product that's made by the claimed process or that any  
25 process it uses contains no material on claimed steps that impact its  
26 functionality.

1           Regarding Petitioner's products, it fails to establish that  
2           Petitioner had knowledge of, let alone copied, the '245 Patent claims, nor  
3           does Patent Owner offer any evidence that any released Petitioner product  
4           challenges any -- practices any challenge claims, excuse me.

5           Third, the evidence that most indicates that Petitioner was  
6           seeking, as is routine in the industry, to replicate Floratech's product's  
7           sensory attributes. That's something that's a common practice in the  
8           industry. For example, see the W.M. Wrigley, Jr. v. Cadbury-Adams case.

9           And its last argument with respect to the age of the prior art is  
10          contrary to law. In Nike v. Adidas, the Federal Circuit explained that the  
11          age of the references can highlight the fact that no one in the art understood  
12          the problem to be solved, but that isn't the case. Would my experienced  
13          counsel have a chance to --

14          JUDGE MAJORS: You are in your rebuttal time, just so you  
15          know.

16          MR. LUCAS: I will reserve the rest of my time. Thank you,  
17          Your Honor.

18          JUDGE MAJORS: That's fine. Okay. Whenever you're ready,  
19          Mr. Kane.

20          MR. KANE: One minute, Your Honor. I'm trying to get the  
21          slides up.

22          JUDGE MAJORS: Oh, okay. I wasn't trying to hurry you  
23          along. I just had my head down.

24          MR. KANE: Ready to proceed, Your Honor.

25          JUDGE MAJORS: Whenever you're ready.

26          MR. KANE: Good afternoon, Your Honors. Again, Michael

1 Kane on behalf of Patent Owner Cargill. So, to begin with, Your Honor, as  
2 we've just heard, there's no prior art of record showing any type of  
3 transesterification in an ester-ester exchange using an enzyme with jojoba  
4 wax esters.

5 JUDGE MAJORS: Mr. Kane, could you just speak up a little  
6 bit? I'm sorry.

7 MR. KANE: Sorry about that. Is that better, Your Honor?

8 JUDGE MAJORS: That's better, yeah. Thank you.

9 MR. KANE: And if we could maybe go to Slide 2 to start with.  
10 So, as we've discussed, the '245 Patent claims a method for ester-to-ester  
11 exchange of jojoba wax esters using lipases. The prior art fails alone or in  
12 combination to suggest that ester-to-ester exchange in jojoba wax esters.  
13 And moreover, the prior art, alone or in combination fails to suggest lipases  
14 catalyzed ester-to-ester exchanges in jojoba wax esters would result in  
15 improved properties such as oxidative stability and improved physical  
16 attributes.

17 If we could go to Slide 13, please. So, here's the claim  
18 language, Your Honor. And again, there's nothing in the prior art where  
19 anyone was using a lipase, an enzyme to transesterify jojoba wax esters.  
20 And so, this was the first, and it was very surprising. A, that it worked, and  
21 B, that you did get these improved attributes, both OSI, which is an  
22 important attribute, relates to shelf life, and the physical viscosity and other  
23 attributes identified within the specification. So this was an important  
24 product, it is an important product and a real improvement on the art.

25 Go to the next slide, please. So, there are several limitations in  
26 the claims, obviously, Your Honor, and there are many deficiencies in the

1 prior art. And what we have to do -- and maybe let's go back, sorry. Just  
2 walking through the claim, you see that it's a process claim, so we're talking  
3 about a method for transesterifying wax esters. First thing is you have to  
4 have a feedstock, which is a blend of the jojoba wax esters and the  
5 hydrogenated wax esters, so the saturated and the unsaturated wax esters.

6           You contact that feedstock with the lipase, the transesterifying,  
7 which thereby transesterifies the jojoba wax esters and the hydrogenated  
8 wax esters in the feedstock to form the transesterified product, and then the  
9 highlighted portion there where the oxidative stability index of the  
10 transesterified product is greater than the OSI of the feedstock. So, you have  
11 to compare the OSI of the feedstock to the OSI of this transesterified product  
12 after you've contacted the feedstock with the lipase.

13           We move on. As I said, there's many deficiencies in the art.  
14 First of all, none of the prior art advantages pointing to actually discloses an  
15 OSI of the feedstock. Likewise, it does not disclose the OSI of the  
16 transesterified product. So, you can't make a comparison because you don't  
17 have actually either of the values in the prior art.

18           Prior art also shows that these transesterification reactions were  
19 unpredictable. Depending upon which reaction was going on, sometimes the  
20 OSI went up; sometimes the OSI went down. So, this is not a situation  
21 where it always goes in one direction. There are many variables. It's a very  
22 complex chemistry.

23           And as Petitioners argues and agrees, the number of double  
24 bonds does not change in this reaction. And double bonds largely impact  
25 OSI. So, if OSI -- excuse me, if the number of double bonds doesn't  
26 increase or decrease, you would not expect OSI to increase.

1 JUDGE VALEK: Counsel, I have a question for you.

2 MR. KANE: Certainly.

3 JUDGE VALEK: If you use a lipase in the reaction, does the  
4 OSI always go up?

5 MR. KANE: We don't know, Your Honor. If you practice the  
6 claim, the lipase will go up. But there's no showing that it will always go  
7 up. In other words, I think the question is whether there's inherent increase  
8 in OSI. There's no showing of that. If you use a lipase, there's no showing  
9 of that, Your Honor.

10 Again, inherency, as I'm sure you're well aware, especially in  
11 the context of obviousness, is very heavily circumscribed and used rarely.  
12 And we've cited the case file, and we can go through that. But no, there's no  
13 evidence in the record that it always goes up.

14 JUDGE VALEK: Well, I'm trying to unpack your statement  
15 that if you practice the claim, it will always go up. So other than using a  
16 lipase, what is it that you have to do in the claim that will necessarily result  
17 in the OSI increasing?

18 MR. KANE: Well, you have to -- as the specification lays  
19 out --

20 JUDGE VALEK: I want to know about the claim, counsel.

21 MR. KANE: Right. Well, you have to have a process whereby  
22 you allow for the reaction to occur for the OSI to go up. So, in other words,  
23 there are many conditions for these lipases. There's temperature. There's  
24 pressure. There's flow rate. There's contact time. Many different conditions  
25 that a person of ordinary skill --

26 JUDGE VALEK: None of those things seem to be recited in

1 the claim. What you've told me and what your witness has represented, or at  
2 least what the POSITA represented in the testimony that's cited in the  
3 briefing, is that if you practice the claim, the OSI will go up. And so, the  
4 claim requires a lipase, and it requires a feedstock with certain requirements.  
5 Other than that, is there anything else that is required for the OSI of the  
6 resulting product to be higher than that of the feedstock, necessarily so?

7 MR. KANE: I guess I'm a little confused by the question, Your  
8 Honor, when you say necessarily so at the end there.

9 JUDGE VALEK: Yeah. So, you said here today to us that if  
10 you practice the claim, the OSI is going to go up.

11 MR. KANE: Yes.

12 JUDGE VALEK: My question to you before was, well, if you  
13 use a lipase, will the OSI necessarily go up? And you said, we don't know.  
14 And so, what I'm asking is, other than the use of a lipase, what else does the  
15 claim require that one do to practice it? Just the claim.

16 MR. KANE: Well, the claim doesn't have any additional steps  
17 if that's what you're asking. But that doesn't mean that it's inherent in the  
18 claim. That doesn't mean it inherently happens all of the time. As I said,  
19 you just would not be practicing the claim if you used a process that did not  
20 result in an allowable reaction to occur.

21 And a person of ordinary skill reading the disclosure and the  
22 specification and looking at the claim language can understand how to  
23 practice the claim to get the desired result. But that doesn't mean that there  
24 are not conditions where you would not get the desired result. And that's  
25 what's necessary to prove inherency. It must necessarily be present. It can't  
26 be a probability. It can't be a possibility. It must necessarily occur under all

1 circumstances. And there is no evidence in the record to support that  
2 interpretation or argument.

3 JUDGE MAJORS: Mr. Kane, if I could follow up.

4 MR. KANE: Yes.

5 JUDGE MAJORS: We do have, I don't know if it's Dr. or Mr.  
6 Addy's declaration, but I believe it's one of the latter ones in the prosecution  
7 where he did the testing at the 20 percent hydrogenated.

8 MR. KANE: Yes.

9 JUDGE MAJORS: And his results determined with that, with  
10 the use of a lipase, that the OSI went up.

11 MR. KANE: Correct.

12 JUDGE MAJORS: Is there any evidence in the record where a  
13 lipase was used with anything otherwise within the contours of the claim and  
14 the value of the OSI went down, feedstock to product?

15 MR. KANE: I don't believe there is, Your Honor. But, again,  
16 you're talking about the inventor practicing his own invention.

17 JUDGE MAJORS: No, I understand. But those are  
18 experimental results that show that when he did it at 20 percent, he got -- the  
19 wherein clause of the claim was practiced.

20 MR. KANE: Correct.

21 JUDGE MAJORS: Okay. And we don't have any evidence  
22 that if you do everything else as recited in the claim and you use a lipase and  
23 somehow that OSI value does not increase as required, right?

24 MR. KANE: We don't have any evidence of that but, you  
25 know, it's -- Petitioner's words did show that.

26 JUDGE MAJORS: I understand.

1 JUDGE VALEK: Counsel, what about the testimony they cite  
2 from your inventor, Mr. or Dr. Addy, where he seems to say that this is --  
3 they're citing Exhibit 1043, page 60, line 1 to 61, line 24. That's slide 21 in  
4 Petitioner's deck.

5 MR. KANE: Well, again, that's -- he's asked the question about  
6 his own invention. So, in other words, he's asked, and if you likewise look,  
7 Your Honor, at page 58, lines 22 to 25, the lead-in to those questions is  
8 about Claim 1. And so then, counsel says, let's walk through the claim. If  
9 you do these steps, will you get the increased OSI? He says yes, because he  
10 is the inventor. He has disclosed his invention. He knows how to practice  
11 his invention to get that claim resolved.

12 JUDGE VALEK: Yeah. And, importantly, he's not saying that  
13 there are other unspecified process steps like temperature or pressure or  
14 atmosphere, whatever it may be that are required. He just says if you do the  
15 providing, contacting, and transesterifying activities that are specified in the  
16 claim, you get increased OSI.

17 MR. KANE: Because that's -- well, because he knows how to  
18 practice those. There are very specific processes disclosed in the  
19 specification and in his experiments that he conducted in order to do that. It  
20 takes -- again, there's temperature, there's pressures, there's flow rates,  
21 there's time of exposure.

22 Again, Petitioner would have to argue that it always necessarily  
23 occurs, and they likewise don't even have a person of skill that opines based  
24 on what Mr. Addy states. So, the evidence here is not anywhere close to  
25 being sufficient to justify a finding of inherency where -- the board would  
26 have to decide based on that testimony when the inventor is being asked

1 about his claim. And this is not a 112 argument.

2 Obviously, we're not talking about support and things like that  
3 in this context. And we think the 112 support is more than adequate given  
4 the disclosure in the specification. So, a person of ordinary skill reading the  
5 specification, reading the conditions under which the experiments were  
6 performed, reading the file history and seeing the conditions under which  
7 Mr. Addy performed his experiments there, would understand how to  
8 practice the claim. But that doesn't mean it always happens. You could find  
9 situations where it wouldn't.

10 And in fact, at the end of the specification, there's a section  
11 where they talk about modifying the disclosure in the specification, can a  
12 person of ordinary skill be able to do that, and maintain the spirit of the  
13 invention.

14 So, this is not a situation where -- and again, the burden is on  
15 the petitioner to show inherency, show that it happens every time, so that it  
16 necessarily is present. Not probably, not most of the time, not sometimes,  
17 necessarily every single time.

18 And, again, if you look at column 16 here, you can see where  
19 they're talking about the ability to modify the disclosure. A person of  
20 ordinary skill reading the specification, understanding the specification,  
21 understanding this chemistry would be able to have to modify to adjust their  
22 process for their equipment, for their blend, for what they're trying to  
23 achieve, whether it's a batch process, a continuous process, those types of  
24 things.

25 And, certainly, I could envision -- and Mr. Addy discloses how  
26 he went about calculating all of those parameters in order to ensure he could

1 practice the claim. So, if you start changing those dramatically, temperature,  
2 pressure, contact time, you may not get the result. But we don't know,  
3 because nobody's done that experiment, and there's no evidence that it  
4 always happens. Mr. Addy just asked, if you practice your claim, your  
5 invention, will you get the increase in OSI? And he says, if you practice my  
6 claim, you get the increase in OSI.

7 And I also point out that much of the prosecution history related  
8 to, in an argument by the examiners, that there was inherency. And so, they  
9 went round and round, and many of these experiments that were pointed to  
10 during the file history, the difference with sunflower and cranberry oil and  
11 jojoba, showed that the art was unpredictable. And sometimes, again, the  
12 OSI goes up, sometimes the OSI goes down.

13 JUDGE MAJORS: I think, Mr. Kane, we're assuming a set of  
14 facts here, and I'm not saying that we necessarily agree with this  
15 determination, but we're assuming that there's a finding that the art teaches  
16 or suggests doing the ester-ester exchange, using somewhere between 20 to  
17 50 percent, and using a lipase. And if that's what the art teaches or suggests,  
18 why is the wherein clause not simply an inherent result of that process?

19 So, I agree with you in terms of the prosecution history, and  
20 you're discussing, if people were talking about alcoholysis and cranbe oil  
21 and other stuff, sometimes they got different results. But as the inventor  
22 testified, if I do the contacting step, I've got the lipase step, and I do the  
23 reaction, I'm going to get the wherein clause. At least that's what the  
24 petitioners read on the testimony, and we're trying to probe as to why is that  
25 wrong.

26 You want to say, well, it's him practicing his own invention. I

1 don't understand why that matters, because the patent is -- I know you know,  
2 the patent can set forth circumstances under which if you do x, y, and z,  
3 you're going to get a result. And so, if the inventor testifies to that, how is  
4 that any different? You can use inherency proofs in the patent, outside the  
5 patent, et cetera, et cetera.

6 MR. KANE: You can, but he didn't say you get it under all  
7 conditions. He never said that, and that's the point. And furthermore, in the  
8 inherency law context, in obviousness, again, the bar is very, very high.  
9 You start with unpredictability. You can't apply inherency. You come back  
10 with, you know, you're applying, and I'm reading from Honeywell, what is  
11 important regarding properties that may be inherent but unknown, is whether  
12 they are unexpected. And this is unexpected.

13 JUDGE MAJORS: But I see that as a different inquiry. I read  
14 Honeywell as saying, you can have an inherent result and meet the claim  
15 limitation, but all things considered, when all the evidence comes in, it may  
16 still be unexpected in the obviousness context to such a degree that the claim  
17 is non-obvious.

18 I don't read the law as saying that once -- I know there's the  
19 often-quoted statement in some old CCPA law about that which is unknown  
20 can't be obvious, but the law since then has rejected that and said you can  
21 have a limitation satisfied inherently, even if the art is completely silent as to  
22 that limitation, even in the obviousness context. Do you understand the  
23 distinction I'm drawing there?

24 MR. KANE: Yes, I do, Your Honor.

25 JUDGE MAJORS: Okay.

26 MR. KANE: And I think even the Par Pharmaceutical case that

1 we've cited, Your Honor, is consistent with what I'm arguing here is that it  
2 said -- first of all, it says that inherency, as you know, comes from  
3 anticipation primarily, and so therefore you have to be very careful in  
4 application. But it says obviousness cannot be predicated on what is  
5 unknown. That's what Par says. And raising the OSI in this context was  
6 unknown, especially when the -- admittedly, the number of double bonds  
7 doesn't change.

8 JUDGE MAJORS: They said that, and then they remanded it  
9 back to the Federal Circuit, rather the District Court, to determine, I think it  
10 was a food effect or some limitations, which the art didn't disclose, but it  
11 was very much a result of the alleged claim to go figure out whether that was  
12 inherent in the art.

13 So, if it was just simply determining whether or not something  
14 was known, the record there in front of the Federal Circuit, they could have  
15 said, this wasn't known out in the art. But that's not how they handled the  
16 case. Anyway, we don't have to go off on a legal aside on this point.

17 MR. KANE: Right. But also, the, you know, typically, and the  
18 argument where inherency comes up is where the process would be in the  
19 prior art.

20 JUDGE MAJORS: Well, I agree with you for the proposition  
21 that it's a higher burden when you're dealing with 103, and so that's why I set  
22 one of my earlier points up to say, well, even to get to this issue, we have to  
23 get to whether the steps are found. This limitation has to be taught or  
24 suggested, et cetera, et cetera, including the lipase limitation.

25 MR. KANE: Right. And, again, I don't want to belabor this  
26 further, but, again, the disclosure and the specification, column 5 talks about

1 the process steps that need to be done. They talk about many different kinds  
2 of enzymes. There's no showing that every single lipase is going to work  
3 with the jojoba oil. We've got some examples of those that work, but not  
4 every single enzyme would necessarily work.

5 But, again, Mr. Addy's speaking from, I've done this. I know  
6 how to run these experiments. I can do it. So, he's not a person of skill.  
7 He's the inventor. He's got extraordinary knowledge and skill. So, his  
8 testimony standing alone is not sufficient to show that this would happen all  
9 the time, would be inherent, necessarily present.

10 And, again, all the examples have much detailed descriptions of  
11 the process, the steps the lipase is going to use, et cetera. So, I'll move on  
12 unless you have further questions here.

13 JUDGE MAJORS: No, I could just make the point that none of  
14 that is claimed. I mean, there's a sequence of the enzyme that's used in the  
15 spec, and that's not claimed. So, we have to go with the record that's here,  
16 and we understand your point.

17 MR. KANE: Okay. Thank you, Your Honor. So back to  
18 trying to get there. As I said, Cummings -- neither Cummings or Brown, the  
19 Brown reference has disclosed the OSI of the feedstock. Go to Slide 15. As  
20 the board found in the ID, all that's described here is the OSI of the refined  
21 jojoba oil, which is the unsaturated product. So therefore, it does not  
22 represent the OSI of the feedstock.

23 JUDGE MAJORS: For the 20 to 50 percent?

24 MR. KANE: For the 20 to 50 percent, correct. Go to the next  
25 slide. And that's the finding that you made. Next slide. Likewise, we asked  
26 Dr. Rockstraw about Brown. He agreed that there's nothing disclosing OSI

1 of the feedstock in Brown. So, neither reference discloses a feedstock OSI.

2 Likewise, Cummings does not disclose the OSI of the  
3 transesterified product, the claimed transesterified product. If we look at  
4 Cummings, back to Slide 13 again, we would see that -- actually, one more.  
5 Right, it just talks about an OSI value of all jojoba esters, which are the  
6 floraester products described in the tables and in the documents of jojoba 50,  
7 15, 20, 30, 70, et cetera. Those are the commercial products.

8 And if we go then to Slide 27, which is Exhibit 1028. 26, sorry.  
9 Slide 26, I'm sorry. Exhibit 1028. So here we have a jojoba 15 and a jojoba  
10 60. So one of the, just the unsaturated oil that's been transesterified and one  
11 of a blend. And we see here that that discloses the OSIs of the  
12 transesterified products, the none line there. So, this is after the  
13 transesterification process, before the post-reaction processing has taken  
14 place.

15 And you can see there that no additives have been made. And  
16 you can see that the jojoba 15 is around 35, which is consistent with example  
17 one in the patent. And it is readily apparent, but I'll just say it, Your Honors,  
18 that these OSI values are not super precise. They're a little squishy. So,  
19 whether it's 30 or 35 or 33, those are not meaningful distinctions in this  
20 context.

21 So, but they're -- here we show jojoba 15 is at 35 hours,  
22 consistent with example one for the jojoba unsaturated, and with Cummings  
23 around 35 hours for the refined oil. Jojoba 60 you see is at 175 after  
24 transesterification, which makes sense because you've got saturated in jojoba  
25 60. So, there's less double bonds, so it should have a higher OSI. But then  
26 you see the tocopherols added.

1           The next slide. Jojoba 15 goes from 35 to 80, and jojoba 60  
2 goes from 175 to 230. And then if we go to the next slide, we see the values  
3 now in trans isomers. They line up with the previous slide, the 1028. 70 for  
4 the oxidative stability of the jojoba 15, and 225 for the jojoba 60.

5           So, these references and these high, you know, to the greater  
6 than 100 or 100 and above sort of ranges, all the way up to jojoba 70 you see  
7 down there, it's a little obscured by the box, but 680, that's completely  
8 consistent with Cummings saying that the jojoba esters exhibit oxidative  
9 stabilities between 100 and 675 hours.

10           So, Cummings is not disclosing the transesterified product, the  
11 claimed transesterified product. Cummings is disclosing the commercial  
12 product that's had the post-processing, including the addition of the  
13 tocopherols, the antioxidants, in order to increase the OSI further. Because  
14 that's what the customer cares about, and likewise, again, it sort of goes  
15 without saying, but Cummings and these trans isomer references, these are  
16 marketing pieces.

17           These are not peer-reviewed articles where they're trying to be  
18 extremely rigorous in explaining every single parameter, every process step,  
19 what is going on, you know, how they got there. They're trying to sell a  
20 product and show the benefits of their product to their potential customers.

21           So the references that Petitioner is selling to don't show the OSI  
22 of the feedstock. They don't show the OSI of the transesterified product.  
23 And the claim requires you compare those two values to see if there's been  
24 an increase, and they don't have either value.

25           JUDGE VALEK: Counsel, so this is Judge Valek. I want to  
26 understand your argument a little bit better.

1 MR. KANE: Sure.

2 JUDGE VALEK: So, neither Cummings nor -- was it TI2,  
3 actually says that the products where the values are reported in these tables  
4 contain -- was it tocopherols? I can't say that word.

5 MR. KANE: Tocopherols.

6 JUDGE VALEK: Tocopherols.

7 MR. KANE: Yes.

8 JUDGE VALEK: Neither one of them actually say that they  
9 contain tocopherols. You're getting that by backing into it from this other  
10 exhibit, Exhibit 1028. Is that correct?

11 MR. KANE: Correct. Because these are -- I'm sorry, go ahead.

12 JUDGE VALEK: No, go ahead.

13 MR. KANE: I was just going to say because the products  
14 described in Cummings are the commercial products. They're all -- they're  
15 using the same nomenclature. Jojoba 15, jojoba ester 15, jojoba ester 20,  
16 jojoba ester 30. Same identification used in Cummings.

17 And again, both of these are marketing pieces put out by  
18 Floratech describing their own products. And furthermore, in 1028, if we  
19 look at 1028, it actually shows the disclosure of how they've boosted the  
20 OSI. They've added the tocopherols after the transesterification process.

21 JUDGE MAJORS: You're referring to page 7, Exhibit 1028?

22 MR. KANE: I believe so, Your Honor. I don't have it in front  
23 of me, sorry. But, yes, there's a description there in terms of the -- so there's  
24 a couple of spots, Your Honor. So, it starts on page 6, actually. Well, it's 7  
25 of 37, I think you're right. It's page 6 of the reference, but 7 of the exhibit.  
26 On the above table 6, on the left-hand side, it says each of these jojoba esters

1 was reported as being 99.5 percent jojoba ester and 0.5 percent tocopherol.

2 JUDGE MAJORS: Do you -- counsel, did you cite any  
3 authority? Are you aware of any authority, legal authority, from the  
4 proposition that one reference asserted in a combination that is silent as to  
5 some technical matter can or should be supplemented by a more technical  
6 disclosure, one might argue, in another reference?

7 MR. KANE: Well, I think, Your Honor, again, I think as you  
8 pointed out previously, our argument is that a person of ordinary skill is  
9 aware of all the art, and aware that these are commercial products. We have  
10 testimony from Dr. Schultz to that effect in the record saying that as a person  
11 of ordinary skill in this field, he would have believed that these commercial  
12 products had tocopherols added. And these documents now that we're  
13 looking at, which is an exhibit that Petitioner is relying on, 1028 Petitioner's  
14 Exhibit, that shows that tocopherols were added.

15 And again, you can see here it's Floratech, the manufacturer of  
16 the Cummings and TI2 products, is reporting what's in those products and  
17 continues at the bottom of the page, on the right-hand side, the last sentence  
18 says, tocopherol -- it describes how the manufacturing process both for the  
19 jojoba, the refined oil only, the jojoba 15, and then the blended products.  
20 And it says, after describing those transesterification reactions, it says  
21 tocopherol is then added to make the commercial jojoba ester 15, as an  
22 example.

23 So coupled with the table that we looked at earlier, table 2, that  
24 shows the none line, where before they've done this, and then the OSI after  
25 the tocopherols are added, being approximately 80 and 230, which then  
26 appears in TI2. So again, these are marketing pieces, this is what they're

1 telling the public and the industry in order to sort of sell their products,  
2 they're showing it in 1028, the same numbers are showing up in TI2 and the  
3 same numbers are showing up in Cummings.

4 JUDGE MAJORS: I know there's a motion to exclude with  
5 respect to some of the 2000 series exhibits, 2012, '13, '14, I believe, among  
6 others.

7 MR. KANE: Yes.

8 JUDGE MAJORS: Okay. How do those exhibits in  
9 particular -- how do they bear on this question of what a skilled person  
10 would think or understand as to the composition of these products when  
11 those are your client's internal confidential documents?

12 MR. KANE: One clarification, Your Honor, the two  
13 certificates of analysis, they are not confidential internal documents.

14 JUDGE MAJORS: They're not, sorry. Okay. I'm mistaken on  
15 that.

16 MR. KANE: Yeah, I think we inadvertently had marked those  
17 as confidential initially. We removed that designation because, as Mr. Curry  
18 testified to, those certificates of analysis are sent with the product to the  
19 customers when they buy the product. So that's standard industry practice in  
20 the chemical industry such as this so that they are providing that information  
21 to the customers when they deliver that product.

22 So, a person of ordinary skill in the art would be aware of those  
23 products, would potentially have access to those COAs if they work in the  
24 industry. The other document, which is the manufacturing process, really  
25 just is consistent with what we're reading here in 1028. In some sense,  
26 they're duplicative of each other, but, again, it's consistent with Dr. Schultz's

1 understanding as a person of skill in the art that he would expect these  
2 products to have these tocopherols added.

3 So again, just to reiterate, no OSI of the feedstock, no OSI of  
4 the claimed transesterified product. You can't make a comparison at all, and  
5 you wouldn't expect to get this OSI increase as we've talked about.

6 Let's turn to Slide 22. Go back. 21, I'm sorry. You can see  
7 here that this is Dr. Schultz's testimony stating that a person of skill would  
8 understand that additional antioxidants were likely to be added to the OSI to  
9 enhance the stability. So, he goes on to say, if you think about it, if the OSI  
10 of the refined jojoba oil is 35 hours, then it's transesterified. No double  
11 bonds are gained or lost. And that's largely what determines the OSI. And  
12 yet, Cummings reports the OSI of that product after transesterification at  
13 100. That's not consistent at all with any experimental or other data in this  
14 record.

15 Again, just to make sure we understand, all this prior art is the  
16 chemical catalyst. None of it's a lipase catalyst. If you go to the next slide,  
17 we'll see that, again, it goes without saying, that you're not gaining or losing  
18 double bonds in this ester-to-ester exchange.

19 One question that came out earlier was whether there was any  
20 dispute as to whether or not the claims were talking about an ester-to-ester  
21 exchange. I point to Exhibit 2046, line 23, 2-12, which is Dr. Rockstraw's  
22 deposition, we've cited, where he agreed that the claims were talking about  
23 an ester-to-ester exchange. And in that ester-to-ester exchange, no bonds  
24 gained or lost. Therefore, you would not expect any increase in OSI.

25 JUDGE MAJORS: Is Patent Owner taking the position that the  
26 claims, Claim 1 at least, cannot include an alcohol component in a

1 transesterification reaction?

2 MR. KANE: I believe that we would, yes, Your Honor. Based  
3 on the arguments -- again, the language here, the nomenclature at times can  
4 be a little bit confusing, where interesterification or transesterification and  
5 other terminologies sort of used interchangeably, so there can be some  
6 confusion here, but the claimed and disclosed reaction is an ester-to-ester  
7 exchange.

8 And in fact, the notice of allowance was predicated on the fact  
9 that doing this ester-to-ester exchange without the alcohol being present led  
10 to the unexpected result of increased OSI. And we had that, I believe, on  
11 Slide 11. That's the -- so, Slide 10 is the interview that took place with the  
12 examiner and the arguments were made and the examiner agreed that it  
13 results in significantly higher OSI without the use of the alcohol.

14 And if you go to the next slide, 11, I believe, here's the notice of  
15 allowance. You can see the instant method wherein a feedstock comprising  
16 jojoba wax esters and hydrogenated jojoba wax esters is enzymatically  
17 transesterified with a lipase result in an unexpected higher OSI as compared  
18 to the OSI of the feedstock, even without the addition of the alcohol.

19 So, and there are other instances in this prosecution history  
20 where they made very clear that that was the unexpected result here, that  
21 they didn't have to add the alcohol because of the alcoholysis-type reactions.  
22 Back to the double bond issue is typically what they're doing is you're taking  
23 a saturated alcohol, attaching that in place of a chain that has double bonds.

24 So, you're basically removing double bonds from -- and then  
25 you're filtering out that free chain with the double bonds at the end of the  
26 process. So, you actually increase the saturation of what would be

1 ultimately the product used with the customer or in downstream processing  
2 or whatever they're going to do. And not surprisingly, the OSI goes up.  
3 You have now fewer double bonds in that process given the substitution of  
4 the saturated chain and then the filtering out of the unsaturated chain. So,  
5 the overall number of double bonds has decreased. So, we'd expect the OSI  
6 to go up.

7                   And what they're saying here is, it's unexpected if you don't  
8 change the OSI. If you don't change the number of double bonds, for  
9 instance, by using an alcohol, you wouldn't expect to get this increase in  
10 OSI.

11                  If we look at one of the references that's consistent with that is  
12 Rozenaal, which is cited in the Slide 21 --

13                  JUDGE MAJORS: I see you cited Rozenaal and, I believe,  
14 Kodali, the other reference for the proposition that the stability either stayed  
15 the same or went down, or at least that's what would be expected.

16                  MR. KANE: Correct, yes. This is Rozenaal talking about if  
17 you do interesterification, all of that alters the distribution of the fatty acids,  
18 the stability of oil remains unchanged.

19                  JUDGE MAJORS: Do you want to talk briefly about the  
20 secondary considerations? And specifically, I'd like to know where Patent  
21 Owner has made the requisite nexus showing.

22                  MR. KANE: Well, Your Honor, I think the nexus showing that  
23 we made for many of the references in terms of the product is not --  
24 probably is not sufficient. But it illustrates the copying that was going on,  
25 and it also illustrates, in particular, the skepticism. And I think that's  
26 probably the one that doesn't have the nexus -- doesn't have any nexus

1 problem.

2 I think the other issue, you could make the argument by saying  
3 they copied the -- they copied the patented process, and then you can make  
4 the argument what product is that? Is it our commercial product? Is it a  
5 commercial product?

6 JUDGE MAJORS: Let me ask the question more directly. I  
7 don't know that there's any evidence on Patent Owner's part to show that any  
8 product that your friends on the other side make or any product that your  
9 client makes practices each and every limitation of the claim.

10 MR. KANE: Yeah. I think that's fair, Your Honor. But, and  
11 again, I would -- just one bit of evidence I would single out would be  
12 skepticism. Because there, skepticism was after reading the patent, reading  
13 the specification. It has nothing to do with products. It's reading the  
14 product -- reading our disclosure and being skeptical.

15 JUDGE MAJORS: You're saying relative to the use of the  
16 Lipase?

17 MR. KANE: Yes, to make these types of products. So that  
18 secondary issue, I think, doesn't have the nexus problem that the others  
19 arguably do. Because it's not tied to any product. It's what a person of  
20 ordinary skill -- how does a person of ordinary skill react to this? I mean,  
21 Petitioner has taken the position. This is not surprising. Nobody would be  
22 surprised about this.

23 They frankly want to say that it's already been done. But, in  
24 fact, we have evidence in the record. And you don't often have that kind of  
25 evidence, I know, Your Honor, in these types of proceedings, but because of  
26 what -- well, given the posture, overall posture here, we have some

1 evidence. There's skepticism. There was skepticism after reading the  
2 specification. So that is informative of what a person of ordinary skill in the  
3 art would believe. And that's consistent with what Dr. Schultz also testified.

4 JUDGE VALEK: And Counsel, just so I understand. You're  
5 saying there is a nexus for that skepticism because after reading the patent  
6 and looking at the claim, they expressed skepticism as to whether or not the  
7 claimed method would actually work?

8 MR. KANE: Correct. But, very briefly, about the lipase  
9 chemistry, Your Honor, again, I know there was some questions in the ID  
10 about the chemistry and trying to understand the chemistry a little bit, and on  
11 that kind of stilted record, obviously, there could be some gaps. So, Dr.  
12 Schultz put in a very robust, detailed declaration going through the entirety  
13 of that and explaining what lipases are. That they're engineered to work  
14 with triglycerides. That they had only been ever shown to work -- to  
15 conduct an ester-to-ester exchange with triglycerides.

16 Dr. Schultz never said they couldn't do any -- you know, lipases  
17 couldn't catalyze any reaction on any other substrate. The reaction that we're  
18 talking about here is ester-to-ester exchange. So, these other reactions on  
19 other substrates were not what Dr. Schultz was talking about. He was  
20 directing his opinions to the claim.

21 As we pointed out, you know, in contrast, Dr. Rockstraw had  
22 very limited knowledge about lipases and how they function. If you look at,  
23 I think, Slide 57, maybe 56. So as an example, these are a couple of  
24 examples. In Slide 57 here, you've got one of the lipases, one category of  
25 lipases is described in the patent as an sn-1, 3 lipase. When I asked Dr.  
26 Rockstraw at the deposition what that was, he didn't even know what it was.

1 That sn-1, 3 refers to the triglyceride structure. So, he didn't even  
2 understand what that was.

3 Likewise, he testified that he hadn't even tried to look at  
4 triglyceride reactions and how the lipases interacted with them. He had no  
5 knowledge of that. And when he said that, he wanted to offer an opinion  
6 that a person of ordinary skill would believe that the lipase and would be  
7 motivated with a reasonable expectation of success of using a lipase on a  
8 jojoba.

9 And we asked him the next question, you know, would you  
10 expect a lipase to work if there's not a glycerol backbone? It's not a  
11 triglyceride. He said, well, there is not a glycerol backbone in a jojoba, and  
12 it works to transesterify those. So, I guess the answer is yes. I expect it to  
13 work. Absolute hindsight, Your Honor. He had no technical basis for  
14 believing it other than Cargill proved that it works.

15 So, I think we can -- and not surprisingly, well, maybe not  
16 surprisingly, but unusually, there's no reply declaration from Dr. Rockstraw.  
17 So, all of Dr. Schultz's opinions and explanations about lipase chemistry  
18 stand unrebutted. And as, you know, you point -- as questioning pointed  
19 out, there's new arguments being made in the reply, and elsewhere even  
20 today there's been new arguments made.

21 They're nowhere in the papers before today, before these slides.  
22 And there's no expert support for any of it. They don't have a declaration  
23 from Dr. Rockstraw. This is all attorney argument. And so, they're asking  
24 the Board to ignore Dr. Schultz's testimony, which essentially stands  
25 unrebutted, and adopt attorney argument in order to render these claims  
26 obvious.

1           And then the final point I would make, Your Honor, is this Lei  
2 reference. Again, it's not prior art. They're inviting the Board to make an  
3 error by relying upon non-prior art. And again, they could have tried to  
4 show you that that was somehow reflective of a person of ordinary skill in  
5 the art too -- by having an expert or a person of ordinary skill testify that.  
6 But again, they don't. They have attorney argument saying this is -- this  
7 non-piece of prior art reflects what persons of ordinary skill in the art  
8 understood as of the time of the file.

9           Any questions, Your Honor? Otherwise, I'll reserve.

10           JUDGE MAJORS: No, thank you. You have twelve and a half  
11 minutes left. Is everyone okay? Anyone need a break? Just asking. Okay.

12           I'll round folks up. So, Petitioner, you have 15 minutes left, and  
13 Patent Owner, you have 14 minutes left.

14           MR. LUCAS: Thank you, Your Honor.

15           JUDGE MAJORS: And you can begin whenever you're ready,  
16 Mr. Lucas.

17           MR. LUCAS: Thank you, Your Honor. The first point I'd like  
18 to make is that you don't need OSI values to meet this claim. You don't need  
19 a comparison of numerical OSI values to meet the claim. Claim limitation  
20 1C is wherein an oxidative stability index, OSI, of the transesterified product  
21 is greater than an OSI of the feedstock, and so if the prior art teaches an  
22 increase in OSI from feedstock to transesterified product, even if you don't  
23 have numerical values, it meets that limitation of the claim.

24           I think I forgot to go through a couple of slides, so I have to go  
25 back to Slide 12 through 15, which actually are about numerical value  
26 comparison.

1                   So, with respect to Cummings, Exhibit 1004, Cummings  
2 teaches that the transesterification of the primary feedstock ingredient,  
3 jojoba oil, increases from 35 hours to over 100 hours. And so that teaching  
4 should be enough for a lipase catalyzed transesterification of a 20 to 50  
5 percent hydrogenated oil -- jojoba oil feedstock in order to achieve increased  
6 OSI. But Cummings teaches more than that.

7                   If we go to the next slide, Dr. Rockstraw testified in his  
8 deposition, Exhibit 2046, that a blend consisting of jojoba oil and 20 percent  
9 fully hydrogenated jojoba oil will have approximately the same oxidative  
10 stability as jojoba oil by itself, 35 hours, because a fully hydrogenated jojoba  
11 oil does not oxidize or does so negligibly, and thus does not produce the  
12 oxidation side products from which the OSI measurement is calculated.  
13 Pages 139 through 141 and 142 through 143.

14                  JUDGE MAJORS: Can I ask a question about that?

15                  MR. LUCAS: Yes, Your Honor.

16                  JUDGE MAJORS: I'll sort of use the terminology, the weakest  
17 link theory, because I think that was either in some testimony or otherwise  
18 from Dr. Rockstraw. And by that, I mean you look to the OSI measurement  
19 for the most unsaturated component of the mixture, and as I think you were  
20 just relaying, that would somehow dictate or that would bias the results  
21 toward that part of the mixture.

22                  MR. LUCAS: Correct.

23                  JUDGE MAJORS: But how then do we explain other record  
24 evidence that shows like the jojoba esters 30 that has at least some portion of  
25 fully unsaturated wax esters involved that the OSI is, you know, 200 or  
26 more, if in fact it was always going to be biased toward the unsaturated

1 component?

2 MR. LUCAS: I think that that's with respect to the  
3 transesterified product that you're talking about that has those high OSI  
4 numbers. We have record evidence that supports Dr. Rockstraw's theory  
5 with respect to jojoba esters 20, for example, the feedstock of jojoba esters  
6 20. We know that in the prosecution history, Mr. Addy made a feedstock  
7 comprised of 20 percent hydrogenated jojoba wax esters and 80 percent  
8 jojoba wax esters.

9 He measured the OSI of that and it came out to 33.8 hours, and  
10 that's very comparable to the 35 hours that's recited in Cummings as the OSI  
11 of the refined jojoba oil alone. And so that data is supportive at least with  
12 respect to the jojoba esters 20 feedstock. Was that responsive to Your  
13 Honor's point, or was there an additional question that you had?

14 JUDGE MAJORS: Yeah, you answered my question.

15 MR. LUCAS: So going back to Slide 13. Specific testimony in  
16 the center of the demonstrative, Dr. Rockstraw said, if instead of five grams  
17 of refined jojoba oil, I put four grams of refined jojoba oil and one gram of  
18 fully hydrogenated wax in it, I would expect to get the same or similar result  
19 from that OSI. And if we move to the next slide, that's supportive of this  
20 data that we just talked about for Mr. Addy measuring the OSI of the 20  
21 percent hydrogenated jojoba oil feedstock.

22 If we move to the next slide, Slide 14 -- Slide 15, I'm sorry.  
23 Accordingly, a POSITA would have understood that the jojoba esters 15,  
24 which has a feedstock or an OSI of around 35 hours, would also be the same  
25 as the feedstock for the jojoba esters 20, which is also around 35 hours. And  
26 you know that Cummings teaches that the OSI of the transesterified products

1 are 100 hours to as high as 675 hours. So, you've got an increase from  
2 around 35 hours to greater than 100 for at least jojoba esters 20.

3 Patent Owner has made up in its poor distinction between  
4 triglycerides and non-triglycerides as it relates to lipase catalyzation.  
5 Exhibits 1034, 1036, and 1037, 1036 is the Department of Agriculture  
6 patent. While focusing on triglycerides, they list non-triglycerides as part of  
7 the feedstock components in those reactions.

8 And so those references aren't making a distinction between  
9 triglycerides and non-triglycerides. They're listing including jojoba oil as  
10 one of the feedstock ingredients. I was asked a question about Dr. Schultz's  
11 deposition with respect to aminolysis. I guess I would point to pages 56,  
12 line 12 through 58, line 17, Exhibit 1041.

13 JUDGE MAJORS: Is that where he testified that he hadn't  
14 studied it as part of his assignment in this case?

15 MR. LUCAS: I do believe he says that on the page.

16 JUDGE MAJORS: I can pull it.

17 MR. LUCAS: Yes. Okay. The point that I would like to make  
18 with respect to aminolysis is that reaction has to do with the cleaving of  
19 jojoba -- the cleaving of esters, which makes it similar in kind to the ester-  
20 ester exchange where the first step is the cleaving of the jojoba.

21 JUDGE MAJORS: I'm sorry, real quick, Judge Valek. But you  
22 don't have any expert testimony on that proposition?

23 MR. LUCAS: No, we don't have expert testimony.

24 JUDGE VALEK: That was my question, thank you.

25 MR. LUCAS: I think Dr. Schultz admitted it on those pages,  
26 but those would be the pages that we would point to.

1 JUDGE MAJORS: I'm sorry, can you give me the cite again?

2 MR. LUCAS: Page 56, line 12 through 58, line 17, Exhibit  
3 1041.

4 JUDGE MAJORS: Okay.

5 MR. LUCAS: Now, counsel represented that one would not  
6 expect an OSI increase because the number of double bonds doesn't change.  
7 We agree that the number of double bonds doesn't change. But notice that  
8 Patent Owner keeps saying that it's a key predictor of oxidative stability. It's  
9 not the only predictor of oxidative stability.

10 The evidence shows, specifically in TI2 and Cummings, that  
11 during transesterification the molecular structure changes. TI2 analogizes  
12 the reaction to, quote, a game of lipid musical chairs. TI2 is Exhibit 1014,  
13 on page 5, it says, quote, in this reaction, the ester linkages between the  
14 jojoba acid and jojoba alcohol in both reactants are unbuckled, liberating the  
15 saturated and unsaturated jojoba alcohols and acids so that they move about  
16 freely and separately in the reaction vessel.

17 When the music stops, the reaction is complete. The  
18 meandering alcohols must find a free acid partner. In a completely random  
19 manner, some old partners find each other again. It goes on to say, at the  
20 same instant, some new bonds are formed as saturated alcohols link with  
21 unsaturated, with saturated acids. The result is a statistically randomized  
22 and isomorphous mixture of jojoba esters, partially saturated esters, and  
23 fully saturated jojoba esters.

24 Cummings, likewise, on page 2 says, interesterification  
25 produces jojoba esters engineered to contain different ratios of molecules  
26 with either no double bonds, fully saturated, one double bond, minor

1 unsaturated, or two double bonds, fully unsaturated. The structure of all  
2 jojoba esters is different from its starting material, jojoba oil. It is these  
3 compositional differences within the family of jojoba esters that create their  
4 expanded utility in cosmetic preparations.

5 JUDGE MAJORS: How do you respond to the Rozenaal and  
6 Kodali references and the results reported there the OSI going down or  
7 according to Rozenaal, predicted to stay the same?

8 MR. LUCAS: Rozenaal, first, doesn't have to do with jojoba  
9 oil.

10 JUDGE MAJORS: But the same musical chairs analogy would  
11 exist there too, right?

12 MR. LUCAS: I'm not sure. I mean, TI2 is talking about --  
13 specifically, about the jojoba reaction being a great example --  
14 transesterification of jojoba being a great example of this reaction and then  
15 lists the high levels of oxidative stability post-reaction.

16 With respect to Slide 26 of Patent Owner's demonstrations,  
17 maybe we can put that up on the screen. So, there's this argument that when  
18 someone would say jojoba esters 15 or jojoba esters 60 that they're referring  
19 to specific commercial products that have had tocopherols added to them.

20 But you can see in the exhibit, Slide 26, which we can get on  
21 the screen in a second here, it shows that there are no tocopherols added in  
22 the first row. And then it shows there are tocopherols added. So how can  
23 you tell from Exhibit 1028, table 2, that whether there are tocopherols added  
24 to jojoba esters commercial products or not?

25 With respect to skepticism, the documents being referenced are  
26 not the claims of the '245 Patent. I'm talking about the specification. So

1 there might have been a miscommunication there. The claims haven't even  
2 been issued yet on the '245 Patent. I think I'm trying to stay off the  
3 confidential record, but when, I think, the email that my friend was referring  
4 to mentioned some kind of skepticism, the '245 Patent hadn't even been  
5 issued. The claims hadn't been issued yet. So, there can't be a nexus  
6 between unissued claims and an expression of skepticism there.

7 JUDGE MAJORS: Let me ask a slightly different question.  
8 What about that evidence being used for the general proposition of disbelief  
9 or a lack of predictability of the use of lipases for the reactions that are  
10 claimed here?

11 MR. LUCAS: I don't think it's expressing a disbelief that  
12 lipases could be used to transesterify jojoba wax esters. I mean, I didn't  
13 depose the person or have any evidence from them as to whether they meant  
14 that or whether they meant, I'm surprised that they are doing it this way  
15 versus a different way.

16 I mean, I think there's a tenuous, very, very tenuous attempt to  
17 link that expression of quote-unquote skepticism to the fact that they were  
18 using a lipase and lipases were known not to work with non-triglycerides. I  
19 don't think that that's supported by that evidence. There are many reasons  
20 why they could have expressed skepticism that a lipase was being used, like  
21 the money that you had to pay for a lipase or any number of things. There's  
22 just no direct linkage there. One other point that I'd like to go back to, if we  
23 can go to Slide 19 --

24 JUDGE VALEK: Counsel, before you move on, you  
25 suggested -- and again, I'm trying to stay off the confidential record, you  
26 suggested that in the time frame for that correspondence, there were only

1 unissued claims at issue. Is that correct?

2 MR. LUCAS: I believe that's -- sorry. Yeah, so the point I  
3 wanted to make there more specifically was that Patent Owner says Vantage  
4 looked at a different related patent. And so, they weren't even looking at the  
5 issued claims of the '245 Patent when the person expressed in that email  
6 what Patent Owner is talking about. So that's what I'm really trying to say is  
7 that they're not even looking at the claims of the '245 Patent. They're  
8 looking at a different related patent.

9 JUDGE VALEK: Okay. And were the claims they were  
10 looking at materially different from the issued claims of the '245 Patent that  
11 are the subject of this proceeding?

12 MR. LUCAS: I'm not sure if I can speak to how materially  
13 different they were. They were not the same claims.

14 JUDGE VALEK: They were claims of a related application,  
15 not this particular application at issue, the 245?

16 MR. LUCAS: That's correct. And that's why I believe that you  
17 can't establish a nexus because the nexus has to be between the specific  
18 claims here and not related claims of a patent. Each patent claim is its own  
19 invention. It's different.

20 JUDGE VALEK: But you don't know how different they are or  
21 how similar they are. Is that correct?

22 MR. LUCAS: No, I don't know how different they are, no.

23 My last point, if we can pull up Slide 19 of Patent Owner's  
24 demonstratives. This is a point that I was trying to make previously with  
25 respect to the difference between Floraesters as a product name and jojoba  
26 esters as a category of material. You see that it says Floraesters, inky name

1 jojoba esters. It says that jojoba esters are made from 100 percent jojoba.

2 If you go to Slide 28 of Patent Owner's slide, this is the  
3 certificate of analysis that was originally branded confidential, as you can  
4 see in the bottom left corner. For jojoba esters 13 -- I mean, 15 and 20, you  
5 can see the composition there is two ingredients, tocopherols and the jojoba  
6 esters. What jojoba esters are we talking about in these certificates of  
7 analysis? That's the question.

8 JUDGE MAJORS: Thank you, Mr. Lucas.

9 MR. LUCAS: Thank you, Your Honor.

10 JUDGE MAJORS: You have 14 minutes, Mr. Kane.  
11 Whenever you're ready.

12 MR. KANE: Thank you, Your Honor. I'll ask for Slide 26  
13 again. I'll load that up.

14 So again, you can see here jojoba 15, jojoba 60. We see the  
15 none -- so before adding tocopherols, roughly 35 and 175. Then the  
16 tocopherols are added, we go to 80 and 230.

17 If we go to the next slide, which is TI2, you see jojoba 15, 70,  
18 consistent with the 80 on the previous slide. Jojoba esters 60, 225,  
19 consistent with the 230. So, we have testimony from Dr. Schultz again that  
20 shows -- makes that connection. So, these are talking about the commercial  
21 products in Cummings and TI2 having tocopherols.

22 With respect to -- if we go to Slide 33, I believe. So, this is  
23 the -- goes to that weakest link argument, Your Honor. As you can see here  
24 again, that none line at the top. You can see both of these esters,  
25 transesterified products, have unsaturated portions to them. We've laid that  
26 out. It's in 1028.

1           According to the weakest link argument, they should both be at  
2 35 hours, and they're not because -- again, it makes sense that they're not  
3 because you've decreased the -- you've increased the amount of saturation,  
4 decreased the number of double bonds in jojoba 60. So, to say that you get  
5 the same OSI doesn't make sense.

6           If you turn to the next slide, 34. Again, now we're still staying  
7 with TI2. There was some argument earlier about how to interpret this chart  
8 to somehow get to an OSI of the feedstock, and with all due respect, Your  
9 Honor, the counsel argued that they were just explaining and expanding  
10 upon the argument in the petition.

11           The argument in the petition was you compare the top two  
12 numbers, jojoba esters 30 and the jojoba oil partial hydrogenate, as it says in  
13 the text, because they have similar melting points. And then in the next --  
14 and then they said the bottom two, you can compare as well.

15           If you then go to Slide 36, which is their new argument, they  
16 now are saying don't compare 1 and 2 and 3 and 4, compare 1 and 4. This is  
17 a brand-new argument. In the reply, no expert support.

18           With respect to the skepticism point -- I didn't mean to speak  
19 earlier. I believe that the -- and I won't get too much into the record, but I  
20 believe that the disclosure is what I was trying to refer to. And in particular,  
21 again, looking at the record as far as you're able to, the experiments in the  
22 disclosure showing the lipase reaction, showing the increase in OSI, and  
23 showing the benefits were in the publication. And that is what the  
24 skepticism and then the subsequent copying was based on.

25           So, I didn't mean to indicate that the claims were the same. In  
26 fact, I don't actually know the claims, other than I believe likely that the

1 claims are probably broader than the claims now, because it was an early  
2 publication and the claims were narrowed during prosecution. But the key  
3 point, I guess, is the experiment showing the lipase transesterification of  
4 jojoba wax with the increase in OSI was in that publication and was the  
5 basis for the skepticism and subsequently copying.

6 So, it's examples 1 and 3, POR pages 63 to 65, explains that  
7 portion of the record, Your Honors, and replicates examples 3 and 4 in the  
8 issued patent. So, I guess I'll just -- any questions at this point, Your  
9 Honors?

10 JUDGE MAJORS: I don't. Judge Snedden? Judge Valek?

11 JUDGE VALEK: No.

12 MR. KANE: So, I'll just then summarize by saying that, again,  
13 there's no OSI of the feedstock in the prior art. There's no OSI of the  
14 claimed transesterified product in the prior art. You can't make that  
15 combination. Dr. Schultz extensively went through and explained why you  
16 would not have expected an increase in OSI if the double bonds had not  
17 decreased.

18 Dr. Schultz also explained the lipase chemistry and why a  
19 person of ordinary skill would not be motivated to try lipase with a jojoba  
20 oil, jojoba wax esters, given the difference in structure and the way that the  
21 lipases are constructed. All of that is unrebutted. There is no declaration  
22 saying that any of that is incorrect. All we have is attorney argument.

23 And finally, with respect to Mr. Addy's testimony, again, he did  
24 not -- he did not say that it necessarily occurs in all circumstances. And,  
25 again, as I said earlier, he is the inventor talking about his patent. He is not  
26 the person of ordinary skill. So whatever Mr. Addy thought is not

1 representative of the person of ordinary skill. And, again, they don't have  
2 any expert declaration to support any kind of interpretation of the Addy  
3 testimony.

4                   And furthermore, Your Honor, it came in the reply. They could  
5 have used that earlier. They could have got that evidence in the record, but  
6 they didn't. So, they waited, and they don't have any expert support for that  
7 proposition, for this inherency argument. And when they pointed to the  
8 inherency argument in the footnote, they cited actually Cummings as being  
9 the basis for showing transesterification of a jojoba wax, both chemical and  
10 lipase. And as we've seen, Cummings does not disclose a lipase  
11 transesterification. Any other questions? Otherwise, I'll refrain.

12                   JUDGE MAJORS: No.

13                   MR. KANE: Thank you, Your Honor.

14                   JUDGE MAJORS: Thank you, everyone. As I mentioned,  
15 please stay behind, if you would, for just a few minutes to help the Court  
16 reporter, if possible. And with that, we're adjourned.

17                   (Whereupon, the above-entitled matter went off the record at  
18 4:22 p.m.)

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