

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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*Ex parte* DANIEL H. MAES, KENNETH D. MARENUS, and  
CHRISTINA G. FTHENAKIS

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Appeal 2007-1144  
Application 10/424,616  
Technology Center 1600

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Decided: May 30, 2007

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Before TONI R. SCHEINER, DEMETRA J. MILLS, and ERIC GRIMES,  
*Administrative Patent Judges.*

GRIMES, *Administrative Patent Judge.*

**DECISION ON APPEAL**

This is an appeal under 35 U.S.C. § 134 involving claims to a method and composition for artificially tanning the skin. The Examiner has rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

**BACKGROUND**

As the outermost layer of the skin, the stratum corneum “represents the major chemical and physical barrier between the body and the

environment” (Specification 1). The Specification discloses that “cholesterol sulfate, when applied topically to the skin, enhances the cohesion of the stratum corneum resulting in a more prolonged retention of the layers of the stratum corneum” (*id.* at 3). When cholesterol sulfate is included in a typical self-tanning formulation, “the rate of turnover of the stratum corneum to which the composition is applied is slowed down, thereby permitting a longer rate of retention of the ‘tanned’ cells, and thus prolonging the length of time the tan remains visible on the skin” (*id.* at 5).

## DISCUSSION

### 1. CLAIMS

Claims 13-16 are on appeal. Claims 1-12 and 17-21 are also pending but have been withdrawn from consideration by the Examiner. Claims 13-16 read as follows:

13. A method for artificially tanning the skin comprising applying to the skin a composition comprising applying to the skin<sup>1</sup>] an effective amount of cholesterol sulfate and an effective amount of at least one self-tanning agent.

14. A composition for artificially tanning the skin comprising an effective amount of cholesterol sulfate and an effective amount of at least one self-tanning agent.

15. The composition of claim 14 which comprises DHA as the self-tanning agent.

16. The composition of claim 15, which also contains an imidazole.

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<sup>1</sup> The second occurrence of “applying to the skin” in claim 13 appears to be a typographical error.

Thus, claim 14 is directed a composition containing cholesterol sulfate and a self-tanning agent, and claim 13 is directed to a method of artificially tanning the skin using such a composition.

Claim 15 limits the self-tanning agent in claim 14's composition to DHA (dihydroxyacetone). Claim 16 adds an imidazole to the DHA-containing composition of claim 15.

## 2. PRIOR ART

The Examiner relies on the following references:

Bernstein	US 5,508,034	Apr. 16, 1996
Miklean	US 5,705,145	Jan. 6, 1998
Cernasov	US 5,976,519	Nov. 2, 1999

## 3. OBVIOUSNESS -- MIKLEAN AND BERNSTEIN

Claims 13-16 stand rejected under 35 U.S.C. § 103 as obvious in view of Miklean and Bernstein (Answer 3).

The Examiner cites Miklean as “teach[ing] skin tanning compositions containing dihydroxyacetone and imidazole as the tanning agents and moisturizers” (*id.*). The Examiner concedes that “[w]hat is lacking in Miklean is the teaching that the moisturizing agent is cholesterol sulfate” (*id.*).

To meet this deficiency, the Examiner cites Bernstein as “advocat[ing] the use of either cholesterol or cholesterol sulfate as moisturizing agents in the treatment of dry skin” (*id.*). Based on these teachings, the Examiner concludes that one of ordinary skill would have considered it obvious to use cholesterol sulfate as the moisturizing agent in the skin tanning compositions of Miklean “since Bernstein teaches that sterols and sterol esters are naturally occurring in stratum corneum of the skin and they form a water

barrier which prevent[s] the water loss from the skin and advocates the use of either cholesterol or cholesterol sulfate as moisturizing agent to moisturize dry skin” (*id.*).

The United States Supreme Court recently reaffirmed “the conclusion that when a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” *KSR Int’l v. Teleflex Inc.*, 127 S. Ct. 1727, \_\_\_\_, 82 USPQ2d 1385, 1395-96 (2007) (quoting *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282, 189 USPQ 449, 543 (1976)).

The *KSR* Court emphasized that “[t]hroughout this Court’s engagement with the question of obviousness, our cases have set forth an expansive and flexible approach . . . .” *KSR*, 127 S. Ct. at \_\_\_\_, 82 USPQ2d at 1395. Despite this flexibility, however, the Court stressed the requirement for explicit analysis in obviousness rejections, rather than unsupported conclusions. *Id.* at \_\_\_\_, 82 USPQ2d at 1395 (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”) (quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)).

Here, the Examiner has articulated sufficient reasoning to support a conclusion of obviousness. As pointed out by the Examiner, Miklean discloses a composition that contains DHA and imidazole (Miklean, col. 2, l. 59, through col. 3, l. 3). Miklean also discloses that “[v]arious other optional ingredients may be included in the compositions . . . , including . . .

moisturizers . . . . Optional ingredients include . . . moisturizing ingredients, such as wheat lipid extracts or ceramides . . .” (*id.* at col. 5, ll. 6-22).

Bernstein discloses that a skin moisturizing composition that contains fatty acids, sterols, phospholipids, and glycolipids “provide[s] unsurpassed protection against and treatment for dry skin conditions” (Bernstein, col. 1, ll. 38-45). As the sterol component, Bernstein lists “cholesterol, which may be present in the . . . composition as either the sterol or as an ester, such as cholesterol sulfate” (*id.* at col. 2, ll. 1-3).

Because Bernstein discloses that a cholesterol sulfate-containing composition was useful as a moisturizer, and because Miklean discloses that a moisturizer was useful in a self-tanning product that contained DHA and imidazole, we agree with the Examiner that one of ordinary skill would have considered it obvious to combine those ingredients, as recited in claims 14-16, and apply them to the skin, as recited in claim 13.

Appellants argue that Bernstein “is devoid of any mention that cholesterol sulfate in the absence of the other lipid components can have any effect with respect to an artificially created tan, either alone or in combination with a self-tanning agent” (Br. 10). Appellants argue that, to have a moisturizing effect, Bernstein discloses that the composition must contain ingredients in addition to cholesterol sulfate (Reply Br. 3-5). We are not persuaded by these arguments.

The instant claims use the term “comprising” to describe the process and the composition, and therefore encompass compositions that contain ingredients in addition to those named in the claims. *See Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997)

(“‘Comprising’ is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.”). Because they use open claim language, the claims do not exclude the additional ingredients in Bernstein’s composition.

Moreover, “the law does not require that the references be combined for the reasons contemplated by the inventor.” *In re Beattie*, 974 F.2d 1309, 1312, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992); *see also KSR*, 127 S. Ct. at \_\_\_\_, 82 USPQ2d at 1397 (“In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103.”). Thus, claims 13-16 are not rendered unobvious by the fact that one of ordinary skill would have added cholesterol sulfate to Miklean’s tanning product for the moisturizing effect predicted from Bernstein’s disclosure, rather than Appellants’ stated purpose of improving retention of an artificial tan.

Appellants also argue that any prima facie case of obviousness “is rebutted due to the surprising results of the present invention. Appellants have found that cholesterol sulfate can cause the stratum corneum to be sloughed off more slowly, and therefore, can improve the retention of the self-tan” (Br. 10). Appellants urge that neither of the cited references “suggest this property of cholesterol sulfate, or more importantly, its effect in combination with a self-tanning agent” (*id.*).

As evidence of unexpected results, Appellants point to the examples in the Specification that demonstrate that, when compared to DHA alone, the combination of DHA and cholesterol sulfate results in a 20% to 25% darker tan after 4 and 5 days (*id.* at 11). Thus, Appellants argue, “the study described in the present specification demonstrates that the addition of cholesterol sulfate to DHA provides an improvement over the closest prior art, namely a longer lasting self-tan, and thus, demonstrates patentability by virtue of the unexpected result” (*id.*).

We agree that evidence of unexpected results may rebut a prima facie case of obviousness. *See In re Rouffet*, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1455-1456 (Fed. Cir. 1998). However, “when unexpected results are used as evidence of nonobviousness, the results must be shown to be unexpected compared with the closest prior art.” *In re Baxter-Travenol Labs.*, 952 F.2d 388, 392, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991).

Here, a composition containing DHA by itself is not the closest prior art to the claims. Miklean’s compositions contain, in addition to DHA, emollients and humectants including glycerine, butylene glycol, phenyl trimethicone (a silicone), and the fatty acid esters coco caprylate/caprinate and octyl palmitate, (Miklean, col. 7, ll. 35-60 (Example 3)). The Specification does not state that the compositions used in comparative Examples IV and V (Specification 10-12) contain the humectants and emollients present in Miklean’s tanning compositions.

The omission of humectants and emollients from the comparative compositions in the Specification is significant because cholesterol sulfate is disclosed in Bernstein to be a moisturizer (col. 2, ll. 1-3) and is shown in the

instant Specification to decrease skin flakiness (Spec. 9-10). If emollients and humectants were known to decrease skin flaking, their addition to a self-tanning composition may well have been expected to result in a longer-lasting tan, in which case the results of the Specification's examples may have been entirely expected. We find it significant in this regard that the Specification does not characterize as unexpected the more long-lasting tan that results from a composition containing cholesterol sulfate.

Therefore, we do not agree that Appellants have presented data demonstrating an unexpected result compared to the closest prior art, as required to rebut the Examiner's prima facie case of obviousness. We affirm the Examiner's rejection of claims 13-16 over Miklean in view of Bernstein.

#### 4. OBVIOUSNESS -- CERNASOV, MIKLEAN, AND BERNSTEIN

Claims 15 and 16 stand rejected under 35 U.S.C. § 103 as obvious in view of Cernasov, Miklean and Bernstein (Answer 6).

The Examiner reasons that it would have been obvious to include DHA and imidazole in a self-tanning composition because Miklean discloses that "a combination of imidazole and dihydroxyacetone provides a significantly darker skin than dihydroxyacetone alone" (*id.*). Appellants argue that the references are not properly combined because Cernasov's pigments produce a tan by a mechanism different than Miklean's DHA and imidazole, and that nothing in Cernasov resolves the shortcomings of the combination of Miklean and Bernstein (Br. 11-12; Reply Br. 6-7).

We are not persuaded by these arguments. As discussed above, one of ordinary skill would have recognized from Miklean and Bernstein that cholesterol sulfate would be a useful moisturizing ingredient in an artificial

tanning product that contains DHA and imidazole, as recited in claims 15 and 16. We see nothing in Cernasov that undermines that conclusion. We therefore affirm the Examiner's rejection of claims 15 and 16 over Cernasov, Miklean, and Bernstein.

#### 5. OBVIOUSNESS -- CERNASOV AND BERNSTEIN

Claims 13 and 14 stand rejected under 35 U.S.C. § 103 as obvious in view of Cernasov and Bernstein (Answer 4-5).

The Examiner cites Cernasov as disclosing “a tanning composition containing a moisturizing agent . . . , [but] lacking . . . the teaching that the moisturizing agent is cholesterol sulfate” (*id.* at 5). The Examiner again relies on Bernstein as “advocat[ing] the use of either cholesterol or cholesterol sulfate as moisturizing agents in the treatment of dry skin” (*id.*). The Examiner concludes that using cholesterol sulfate as the moisturizing ingredient in Cernasov's tanning product would have been obvious to one of ordinary skill “since Bernstein teaches that sterols and sterol esters are naturally occurring in stratum corneum of the skin and they form a water barrier which prevent[s] the water loss from the skin and advocates the use of either cholesterol or cholesterol sulfate as moisturizing agent to moisturize dry skin” (*id.*).

Appellants argue that claims 13 and 14 require a “self-tanning agent,” which is defined as “a cosmetic product (as one containing dihydroxyacetone) that when applied to the skin reacts chemically with its surface layer to give the appearance of a tan” (Br. 9, citing <http://www2.meriam-webster.com/cgi-bin/mwmednlm>). In contrast, Appellants argue, the pigments in Cernasov's composition “do not fall

within the definition of ‘self-tanning agent’ because pigments do not react chemically with the surface layer of the skin to produce the appearance of a tan,” and therefore, the Examiner’s “interpretation of the term ‘self-tanning agent’ is in direct conflict with the meaning of the phrase as it is used in the cosmetic industry” (*id.*; *see also* Reply Br. 5-6).

The Examiner argues that, under the broadest reasonable interpretation, the “pigments themselves give the tanning effect, [so] they are self-tanning agents” (Answer 5).

“[D]uring patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.” *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). Thus, “in proceedings before the PTO, claims in an application are to be given their broadest reasonable interpretation consistent with the specification and that claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Sneed*, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983) (citation omitted). However, “limitations are not to be read into the claims from the specification.” *In re Van Geuns*, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993).

We do not find Appellants’ dictionary-based interpretation of “self-tanning agent” to be unreasonable. However, we do not agree that it is the *broadest* reasonable interpretation, as required. Rather, in our view, by seeking to limit “self-tanning agent” to agents that chemically react with the skin, Appellants improperly read their preferred embodiment from the Specification into the claims. We agree with the Examiner that one of

ordinary skill in the art giving the terms “artificially tanning the skin” and “self-tanning agent” their broadest reasonable meaning would interpret them to encompass any agent that can provide a tanning coloration to the skin in the absence of exposure to the sun.

Cernasov discloses “a new cosmetic tanning agent” (Cernasov, col. 1, l. 7), in which “very natural tones [are] achieved by the tanning film” (*id.* at col. 3, l. 11). Thus, as urged by the Examiner, Cernasov discloses compositions that can provide a tan to the skin in the absence of exposure to the sun; i.e., self-tanning agents.

Cernasov also discloses that the tanning composition may contain “moisturizing additives” (*id.* at abstract; *see also* col. 6, ll. 16-17 (claim 1)). Cernasov does not disclose cholesterol sulfate as one of the moisturizing additives. However, as discussed above, Bernstein discloses that a skin moisturizing composition that contains sterols “such as cholesterol sulfate” (Bernstein, col. 2, ll. 1-3), “provide[s] unsurpassed protection against and treatment for dry skin conditions” (*id.* at, col. 1, ll. 38-45).

Based on these disclosures, we agree with the Examiner that one of ordinary skill would have recognized that Bernstein’s cholesterol sulfate would be a useful moisturizing ingredient in Cernasov’s artificial tanning product. We therefore affirm the Examiner rejection of claims 13 and 14 as obvious over Cernasov and Bernstein.

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SUMMARY

Because the cited references demonstrate that one of ordinary skill would have considered the subject matter of claims 13-16 obvious, we affirm the Examiner's rejection of those claims under 35 U.S.C. § 103.

AFFIRMED

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