

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* HANS-CHRISTIAN RATHS, KARL-HEINZ SCHMID,  
and RAINER RUEBEN

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Appeal 2008-3556  
Application 10/466,147  
Technology Center 2800

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Decided: November 7, 2008

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Before TERRY J. OWENS, CATHERINE Q. TIMM, and  
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL  
STATEMENT OF THE CASE

The Appellants appeal from a rejection of claims 11-20. Claims 1-10 have been canceled, and claims 21-30 have been withdrawn from consideration by the Examiner. We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

*The Invention*

The Appellants claim a process for making a surfactant composition.

Claim 11 is illustrative:

11. A process for making a surfactant composition comprising:

- (a) providing a starting mixture containing:
    - (i) an aqueous alkali solution;
    - (ii) at least one amino acid and/or a salt thereof;
    - (iii) a fatty acid chloride;
    - (iv) an acylatable surfactant precursor selected from the group consisting of protein hydrolyzates, polyamino acids, aminosulfonic acids, amino sugars, and mixtures thereof; and/or
    - (iva) nonionic surfactants;
  - (v) up to about 15% by weight, based on the weight of the starting mixture, of a polyol component;
- (b) providing a mixing mechanism; and
  - (c) reacting (ii), (iii), and (iv) with mixing, to form the surfactant composition.

*The References*

Kaneko (JP '787) (as translated)	JP 5-97787	Apr. 20, 1993
Ehle	5,942,635	Apr. 24, 1999

*The Rejections*

Claims 11-20 stand rejected under 35 U.S.C. § 103 over JP '787 or Ehle.

## OPINION

We affirm the Examiner's rejections. The Appellants argue the claims in the following groups: 1) claim 11, 2) claims 12-14, and 3) claims 15 and 16 (App. Br. 10-12). Hence, we limit our discussion to claim 11 and one claim in each of the other groups, i.e., claims 12 and 15. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2007). Claims 17-20 which are not separately argued stand or fall with claim 11 from which they depend.<sup>1</sup>

### *Claim 11*

#### *Issue*

Have the Appellants shown reversible error in the Examiner's determination that the combined disclosures of JP '787 and Ehle would have rendered the Appellants' claimed invention *prima facie* obvious to one of ordinary skill in the art?

#### *Findings of Fact*

JP '787 discloses a method for making an N-long-chain acylamino carboxylic acid surfactant or an N-long-chain acylamino sulfonic acid surfactant for use in a cleaning composition (p. 7).<sup>2</sup> JP '787 distills a fatty-acid chloride to remove unreacted fatty acids and thereby obtain a highly

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<sup>1</sup> The Appellants argue, regarding claim 20, that in JP '787 and Ehle "there is neither teaching nor suggestion to pass the composition of claim 11 to a mixing mechanism capable of simultaneously mixing and circulating the starting mixture" (App. Br. 11-12). That is tantamount to merely pointing out the difference in what claims 11 and 20 cover, and is not a substantive argument for the separate patentability of claim 20. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2007). The remainder of the Appellants' argument regarding claim 20 is directed toward claim 11 (App. Br. 12). Claim 20, therefore, stands or falls with claim 11.

<sup>2</sup> We have numbered the pages of the JP '787 translation starting with the cover page as page 1.

pure fatty-acid chloride, and then reacts the fatty-acid chloride with an amino carboxylic acid or an amino sulfonic acid to produce the surfactant (pp. 10, 12). The JP '787 cleaning composition can contain other surfactants including nonionic surfactants (p. 14).<sup>3</sup>

Ehle discloses a process for continuously preparing N-acylamino carboxylic acids and N-acylamino sulfonic acids, and their alkali metal salts, from the alkali metal salts of amino carboxylic acids and amino sulfonic acids, respectively, and carbonyl halides, by feeding reactants to a reactor having a circulating circuit for immediate reaction therein, and continuously discharging from the circulation circuit part of the product solution corresponding to the amount of reactants fed (col. 2, ll. 40-49). Ehle's particularly suitable carbonyl halides are fatty acid chlorides and bromides (col. 3, ll. 41-43).

#### *Analysis*

The Appellants argue that there is no teaching or suggestion in the references to acylate a mixture of amino acids (component ii in the Appellants' claim 11, used in JP '787 (pp. 10, 12) and Ehle (col. 2, ll. 40-44) to make N-acylamino carboxylic acids) and acylatable surfactant precursors (component iv in the Appellants' claim 11, one of the listed acylatable surfactant precursors being amino sulfonic acids, used by JP '787 (pp. 10, 12) and Ehle (col. 2, ll. 40-44) to make N-acylamino sulfonic acids) (App. Br. 8, 10; Reply Br. 2-4).

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<sup>3</sup> JP '787 adds the nonionic surfactants, which are component (iva) in the Appellants' claim 11, to the cleaning composition (p. 14), but does not disclose including them in the reaction mixture used to make the acylamino acid.

A *prima facie* case of obviousness can be established by showing that there was “an apparent reason to combine the known elements in the fashion claimed.” *KSR Int’l. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740-41 (2007). The apparent reason for combining the amino carboxylic acid and amino sulfonic acid of both JP ‘787 and Ehle as reagents for producing a surfactant containing both N-acylamino carboxylic acid and N-acylamino sulfonic acid would have been to produce a surfactant that is useful for the same purpose as a surfactant made from each amino acid alone and has the beneficial effects of both N-acylamino carboxylic acid and N-acylamino sulfonic acid.. Such a combination has been held to have been *prima facie* obvious because it is merely a combination of “two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose.” *In re Kerkhoven*, 626 F.2d 846, 850 (CCPA 1980).

The Appellants argue that the object of JP ‘787 (as indicated by the abstract) and Ehle (as indicated by col. 2, ll. 35-39) is to provide a pure N-acylamino carboxylic acid or a pure N-acylamino sulfonic acid product and that, therefore, one of ordinary skill in the art would not have used a mixture of the amino carboxylic acid used to make a pure N-acylamino carboxylic acid and the amino sulfonic acid used to make a pure N-acylamino sulfonic acid (Reply Br. 2-3, 6).

The purity desired in JP ’787 is purity of the acylamino acid product with respect to unreacted fatty acids (p. 10). To obtain that purity JP ‘787 distills the fatty-acid chloride. *See id.* JP ‘787 does not indicate that for either the N-acylamino carboxylic acid or the N-acylamino sulfonic acid product to be effective as a surfactant it needs to be pure with respect to the

other of those two products. Similarly, Ehle desires “acylamino acids in high yield and purity” (col. 2, l. 36), i.e., purity with respect to materials that are not acylamino acids. Ehle does not indicate that a mixture of acylamino acids is undesirable.

The Appellants argue that because amino carboxylic acids and amino sulfonic acids react at different rates with acyl chloride, if the two acids are used together as reactants there is no assurance that the proportion of acylamino carboxylic acid product to acylamino sulfonic acid product would be the same as the proportion of amino carboxylic acid reactant to amino sulfonic acid reactant (Reply Br. 3).

One of ordinary skill in the art would have appreciated that both the acylamino carboxylic acid and the acylamino sulfonic acid would be effective as a surfactant regardless of their relative proportions in the product mixture. Hence, the possibility of one of the surfactants being present in a greater proportion than the other in the product mixture would not have discouraged one of ordinary skill in the art from using a mixture of amino carboxylic acid and amino sulfonic acid reactants.

The Appellants argue that the product produced by their process contains unreacted amino acid, unreacted surfactant precursor and impurities produced during the reaction (App. Br. 8-11; Reply Br. 5).

The Appellants’ argument is not well taken because the Appellants are arguing a limitation that is not in claim 11. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982).

#### *Conclusion of Law*

The Appellants have not shown reversible error in the Examiner’s determination that the combined disclosures of JP ‘787 and Ehle would have

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rendered the Appellants' claimed invention *prima facie* obvious to one of ordinary skill in the art.

*Issue*

Have the Appellants shown reversible error in the Examiner's determination that the Appellants failed to establish that their claimed invention produces unexpected results?

*Analysis*

The Appellants argue that they have unexpectedly discovered that their reaction mixture is an excellent surfactant and emulsifier and can be used without further purification (App. Br. 9; Reply Br. 5).

We are not persuaded by that argument because it is not supported by evidence. Mere attorney argument cannot take the place of evidence. *See In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984); *In re Payne*, 606 F.2d 303, 315 (CCPA 1979); *In re Greenfield*, 571 F.2d 1185, 1189 (CCPA 1978); *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974).

*Conclusion of Law*

The Appellants have not shown reversible error in the Examiner's determination that the Appellants have failed to establish that their claimed invention produces unexpected results.

**Claim 12**

Claim 12, which depends from claim 11, requires that "(ii) is employed in an amount of from about 20 to 70% by weight, based on the weight of (i), (ii), (iv), and (v)."

*Issue*

Have the Appellants shown reversible error in the Examiner's determination that JP '787 and Ehle would have rendered *prima facie*

obvious, to one of ordinary skill in the art, the amount of the Appellants' component (ii) required by claim 12?

*Analysis*

The Appellants argue that in the JP '787 and Ehle examples, the reaction mixtures contain about 6 to about 12 wt% amino acid or amino acid salt, and that there is no teaching or suggestion of using 20 to 70 wt% amino acid salts in a reaction mixture for preparing a salable product without extensive recovery steps (App. Br. 11).

The Appellants' argument is not persuasive because, first, claim 12 does not require preparing a salable product without extensive recovery steps. Second, the references are not limited to their examples. *See In re Fracalossi*, 681 F.2d 792, 794 n.1 (CCPA 1982); *In re Kohler*, 475 F.2d 651, 653 (CCPA 1973); *In re Mills*, 470 F.2d 649, 651 (CCPA 1972); *In re Bozek*, 416 F.2d 1385, 1390 (CCPA 1969). Instead, all disclosures in a reference must be evaluated for what they would have fairly suggested to one of ordinary skill in the art. *See In re Boe*, 355 F.2d 961, 965 (CCPA 1966). Third, the examples do not use a mixture of amino carboxylic acid and amino sulfonic acid. As pointed out above regarding the rejection of claim 11, the references would have provided one of ordinary skill in the art with an apparent reason to use those reactants in combination. Amounts of amino carboxylic acid (the Appellants' component ii) relative to amino sulfonic acid (the Appellants' component iv) and aqueous alkali within the broad range of about 20 to 70 wt% would have been determinable by one of ordinary skill in the art through no more than routine experimentation to obtain the optimum relative benefits of those amino acids. *See In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990); *In re Kulling*, 897 F.2d

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1147, 1149 (Fed. Cir. 1990); *In re Aller*, 220 F.2d 454, 456 (CCPA 1955); *In re Sebek*, 465 F.2d 904, 907 (CCPA 1972).

#### *Conclusion of Law*

The Appellants have not shown reversible error in the Examiner's determination that JP '787 and Ehle would have rendered prima facie obvious, to one of ordinary skill in the art, the amount of the Appellants' component (ii) required by claim 12.

#### Claim 15

Claim 15, which depends from claim 11, requires that "(ii), (iii) and (iv) are employed in a molar ratio of (ii) + (iv):(iii) of from about 1:1 to 1.5:1."

#### *Issue*

Have the Appellants shown reversible error in the Examiner's determination that JP '787 and Ehle would have rendered prima facie obvious, to one of ordinary skill in the art, the molar ratio of the Appellants' components (ii), (iii) and (iv) required by claim 15?

#### *Analysis*

The Appellants argue that JP '787 and Ehle do not use a surfactant precursor (App. Br. 11).

As pointed out above, the amino sulfonic acid disclosed by JP '787 (p. 10) and Ehle (col. 2, l. 44) is one of the acylatable surfactant precursors listed in the Appellants' claim 11.

The Appellants argue that JP '787 and Ehle would not have led one of ordinary skill in the art to use a molar ratio of amino acid to fatty acid chloride of about 1:1 to about 1.5:1 (App. Br. 11; Reply Br. 4-5). The Appellants appear to be arguing that the resulting product would contain

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unreacted amino carboxylic acid and unreacted amino sulfonic acid (Reply Br. 5).

Neither JP ‘787 nor Ehle indicates that the amino acid and fatty acid chloride must be in stoichiometric ratio. Also, neither reference indicates that if an excess of amino acid to fatty acid chloride is used, a purification step cannot be used to remove the excess amino acid from the product. Ehle’s examples all include a workup step. The Appellants’ “comprising” term in claim 11 opens that claim and its dependent claim 15 to non-recited steps such as product purification. *See In re Baxter*, 656 F.2d 679, 686 (CCPA 1981).

#### *Conclusion of Law*

The Appellants have not shown reversible error in the Examiner’s determination that JP ‘787 and Ehle would have rendered prima facie obvious, to one of ordinary skill in the art, the molar ratio of the Appellants’ components (ii), (iii) and (iv) required by claim 15.

#### DECISION/ORDER

The rejection of claims 11-20 under 35 U.S.C. § 103 over JP ‘787 or Ehle is affirmed.

It is ordered that the Examiner’s decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

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