

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* ANDREW R. GRAYDON,  
KEVIN G. BLYTH,  
KEVIN L. KOTT, and  
GLENN S. WARD

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Appeal No. 2007-0360  
Application No. 11/050,001

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ON BRIEF

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Before GRIMES, LINCK, and LEBOVITZ, Administrative Patent Judges.  
LEBOVITZ, Administrative Patent Judge.

DECISION ON APPEAL

This appeal involves claims to a solid particulate laundry detergent. The Examiner has rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 134. We affirm.

*Background*

Laundry detergents that contain clay, silicone (including polysiloxane), and flocculating agents are known in the prior art. Specification 2: 22-25. These are

known to impart a fabric-softening benefit to the laundered fabric. *Id.* at 1: 20 to 2:6.

“[P]olydimethylsiloxane is the preferred silicone component for incorporation into a solid particulate laundry detergent composition to provide a fabric-softening benefit.” *Id.* at 2: 33-34. “However, the unsubstituted nature of the polydimethylsiloxane also means that it is a highly hydrophobic material. In addition, the polydimethylsiloxane is in the form of a fluid at ambient conditions, and cannot simply be dry-added to a solid particulate laundry detergent composition; a suitable solid carrier material must be used. Clay is the most highly preferred solid carrier material for polydimethylsiloxane.” *Id.* at 3: 5-9. “However, due to the very high hydrophobic nature of the polydimethylsiloxane, when the polydimethylsiloxane is admixed with a clay, the resultant particulate admixture is rendered hydrophobic, which leads to a poor fabric-softening profile.” *Id.* at 3: 11-14. With this as background, Appellants conclude: “The Inventors have surprisingly found that both polydimethylsiloxane and clay can be admixed together and incorporated into a solid particulate laundry detergent composition to provide a good fabric softening performance by selectively modifying the amounts of other specific components that need to be present in the composition.” *Id.* at 3: 16-20.

## DISCUSSION

Claims 1-17 and 19-26, all the pending claims, are on appeal. Br. 2. All the claims are rejected over the same prior art reference. Br. 5. Appellants have provided separate arguments for the patentability of the following groups of claims: 1) claims 1-9, 12-16, and 19-24; 2) claim 10; 3) claim 11; and 4) claims 17, 25, and 26. We address each grouping separately.

For the purpose of deciding grouping 1), we have selected claim 1 as representative. 37 C.F.R. § 41.37(c)(1)(vii). It reads as follows:

1. A solid particulate laundry detergent composition comprising:

(a) from about 2wt% to about 20wt% clay;  
(b) from about 0.5wt% to about 10wt% polydimethylsiloxane;  
(c) from about 0.1wt% to about 5wt% flocculating component;  
(d) from about 5wt% to about 25wt% anionic deterative surfactant comprising a substituted or unsubstituted linear or branched alkyl benzene sulphonate;

(e) from about 1wt% to about 22wt% zeolite;

wherein the weight ratio of zeolite to alkyl benzene sulphonate is from about 0.1:1 to less than about 2.8:1, wherein the polydimethylsiloxane is in a pre-emulsified form and wherein the clay and polydimethylsiloxane are present together in the composition in the form of a co-particulate admixture.

Separately argued claims 10, 11, 17, 25, and 26 depend on claim 1. They read as follows:

10. A composition according to Claim 1, wherein the anionic deterative surfactant comprises: (a) a linear or branched, substituted or unsubstituted, C<sub>10-13</sub> alkyl benzene sulphonate; and (b) a linear or branched, substituted or unsubstituted, C<sub>8-18</sub> alkyl sulphate, and wherein the weight ratio of the alkyl benzene sulphonate (a) to the alkyl sulphate (b) is greater than about 5: 1.

11. A composition according to Claim 1, wherein the composition comprises from about 0.1wt% to about 5wt% polymeric polycarboxylate.

17. A composition according to Claim 1, wherein the polydimethylsiloxane has a viscosity of from about 50,000cP to about 400,000cP, when measured at a shear rate of 20s<sup>-1</sup> and a temperature of 20°C.

25. The composition according to Claim 1, wherein the pre-emulsion form has a viscosity of from 1,500cP to 50,000cP.

26. A composition according to Claim 1, wherein the pre-emulsion form has a volume average primary droplet size of from 0.1 micrometers to 5,000 micrometers.

*Obviousness under 35 U.S.C. § 103*

Claims 1-17 and 19-26 stand rejected under 35 U.S.C. § 103(a) as obvious over Brockett.<sup>1</sup>

Brockett discloses a fabric care composition for conferring softness and anti-wrinkle benefits to a fabric treated with it. Brockett at 4, ll. 5-9. The composition comprises an anti-wrinkle agent and a solid carrier. *Id.* at 4, ll. 25-30. It can comprise “a functionalized oil” and “a solid carrier selected from clays, zeolites, sugar or derivatives thereof, solid salts, starch or derivatives thereof, and mixtures thereof to form an admixture.” *Id.* at 5, ll. 27-30. A functionalized oil and clay are preferred because they “impart unexpected softness benefits to fabrics treated with such compositions.” *Id.* at 5, ll. 15-28. The functional oil of Brockett can be a silicon oil, including polydimethylsiloxane (“PDMS”), which is utilized as a wrinkle reduction agent in Brockett’s specific examples. *Id.* at 9, l. 22; 13, ll. 16-27; 32, ll. 10-14. In one example, the silicon oil is an emulsion. *Id.* at 33, l. 5. In addition to the functionalized oil and clay, surfactants (*Id.* at 17, l. 30 to 19, l. 2) and flocculating agents can also be present (*Id.* at 30, ll. 11-13).

*Claims 1-9, 12-16, and 19-24*

The Examiner asserts that Brockett teaches components (a) through (e) of claim 1 in quantities which overlap with the recited amounts. *See Answer 4.* In describing how Brockett meets the limitation in claim 1 that the “polydimethyl-

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<sup>1</sup> Brockett, WO 03/055966 A1, Jul. 10, 2003.

siloxane is in a pre-emulsified form”, the Examiner states that “[u]se of an emulsified silicone polymer is exemplified, although this silicone polymer is not specifically disclosed as being a polydimethylsiloxane. . . . [W]here the use of emulsified silicones is disclosed [at 33, l. 5] and the suitability of polydimethylsiloxanes is disclosed, the use of an emulsified polydimethylsiloxane would be obvious in the absence of any evidence of unexpected results.” Answer 4. The Examiner also asserts that the requirement in claim 1 that the PDMS is “pre-emulsified” is a product-by-process limitation and that there is no pre-emulsified silicone present in the final claimed product. *Id.* at 5.

With respect to the overlapping amounts, the Examiner concludes that “[i]n the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed Cir. 1990).” Answer 4-5. With the exception of claim 11 (*see infra* p. 9), Appellants do not challenge this conclusion.

Appellants assert that Brockett “fail[s] to disclose a solid particulate laundry detergent composition wherein the polydimethylsiloxane is in a pre-emulsified form.” Br. 7, ll. 3-5. They argue that the skilled worker would recognize that emulsified PDMS is

distinguishable from a nonemulsified form and further, the specification discloses that the pre-emulsified form of polydimethylsiloxane improves the processability of the particulate admixture of polydimethylsiloxane and clay. . . . In addition, the claim limitation of claim 1 is not limited to the process of making the final product (i.e., detergent composition), but rather, claim 1 recites a detergent composition comprising a component not taught by Brockett et al (i.e., polydimethylsiloxane in its pre-emulsified form).

Br. 7-8. For this reason, Appellants contend that “pre-emulsified form” is not a product-by-process limitation. *Id.* at 8.

“[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). In our view, it was reasonable for the Examiner to infer that the claimed “solid particulate laundry detergent” would not contain the PDMS in a “pre-emulsified form.” Answer 5. According to the specification, “pre-emulsified” means “that the silicone is in the form of an emulsion when it is admixed to the clay during the process of preparing the particulate admixture.” Specification 6: 27-29. An “emulsion” is a liquid.<sup>2</sup> The Examiner states that “[t]he product is a granular solid; in the absence of a liquid phase, no emulsion is possible, and the final product appears to be no different from the products of the prior art.” Answer 5. Appellants did not offer any explanation as to how an emulsion would be possible in the claimed “solid particulate” composition. Moreover, we can find no statement in the specification that the emulsion would, in fact, still exist when the PDMS is processed into its final solid particulate form.

Appellants argue:

The inventors have surprisingly found that both polydimethylsiloxane and clay can be admixed together and incorporated into a solid particulate laundry detergent composition to provide a good fabric-softening performance by using a pre-emulsified form of polydimethylsiloxane and by selectively modifying the amounts of the specific components in the detergent composition (page 3, lines 5-20 and page 6, lines 25-27). Accordingly, the use of pre-emulsified form of polydimethylsiloxane in the detergent composition is not [a] product-by-process claim limitation because it is essential for not only admixing the polydimethylsiloxane and clay but also provides the

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<sup>2</sup> “[A] liquid preparation . . .” *Random House Dictionary* 434 (1975).

solid particulate laundry detergent composition with a different property characteristic, namely improved fabric softening performance.

Reply Br. 2: 31 to 3:9.

We do not find that specification supports their arguments. On page 3, ll. 16-20, of the specification, it is stated:

The Inventors have surprisingly found that both polydimethylsiloxane and clay can be admixed together and incorporated into a solid particulate laundry detergent composition to provide a good fabric-softening performance by selectively modifying the amounts of other specific components that need to be present in the composition.

Here, the specification indicates that the “good fabric-softening performance” is achieved by “selectively modifying the amounts of other specific components” present in the composition. It does not attribute this “good” performance to the presence of pre-emulsified PDMS as asserted by Appellants.

Appellants also point to p. 6, ll. 25-27, of the specification:

The polydimethylsiloxane is preferably in pre-emulsified form, this is especially beneficial because the polydimethylsiloxane is admixed with the clay; the processability of the particulate admixture is improved when the silicone is in pre-emulsified form.

The latter refers to the benefit of pre-emulsified PDMS in improving “processability,” apparently a reference to the process which is used to produce the claimed “solid particulate laundry detergent composition.” However, there is no indication that, as stated by Appellants, pre-emulsified PDMS confers “a different property characteristic” on the final detergent product, itself. Reply Br. 3.

Because the Examiner reasonably inferred that the PDMS is present in the laundry detergent in the same form present in Brockett’s composition, the burden shifted to Appellants to provide evidence to overcome this presumption. We can

find no evidence in the record before us that the claimed particulate detergent contains pre-emulsified PDMS. There is also no evidence that, when pre-emulsified PDMS is used to prepare a solid particulate detergent, the final product is different from the detergent described by Brockett. Arguments of counsel cannot take the place of evidence lacking in the record. *Estee Lauder Inc. v. L'Oreal, S.A.*, 129 F.3d 588, 593, 44 USPQ2d 1610 (Fed. Cir. 1997).

Accordingly, we affirm the rejection of claim 1. Since separate arguments for patentability were not set forth for claims 2-9, 12-16, and 19-24, these claims fall together with claim 1.

#### *Claim 10*

Claim 10 is dependent on claim 1 and further requires that the surfactant comprise an alkyl benzene sulphonate and alkyl sulphate. Both these surfactant compounds are disclosed in Brockett. Brockett at 18, ll. 1-5. The Examiner argues that Brockett exemplifies two different surfactants, but not the same “anionics” recited in claim 10. Answer 6. However, the Examiner asserts “that, where both anionics are disclosed as suitable, the person of ordinary skill in the surfactant art could formulate compositions as recited by appellant by working within the general teachings of the reference.” *Id.*

Appellants challenge the rejection, arguing that Brockett not only fail[s] to disclose the anionic deterative surfactants recited in claim 10, but fail[s] to disclose the use of such anionic deterative surfactants together in a detergent composition. The Examiner’s assertion that where combinations of anionics are disclosed as suitable, a person of ordinary skill in surfactant art could formulate compositions as recited by Appellant by working within the general teachings of the reference, is “hindsight recognition or at best . . . obvious to try”, *In re Geiger*, 2 U.S.P.Q.2d 1276, 1278 (C.A.F.C. 1987). (Reply Br. 5.)

We agree with the Examiner that choice of surfactants would have been obvious to a person of ordinary skill in the art at the time the invention was made. As stated by the Examiner, Brockett discloses the specifically claimed surfactants, as well as mixtures of surfactants, albeit not a mixture of the two which are instantly claimed. Answer 3. Brockett also states that “[m]any suitable detergent active compounds [surfactants] are available and fully described in the literature.” Brockett at 17, ll. 24-25. We infer from this statement, and similar disclosure in the instant specification (8:1-28), that surfactants and their cleaning properties were well known in the prior art. Consequently, it appears that all Appellants have done is to select a combination of known surfactants for their known cleaning properties. An obviousness determination under 35 U.S.C. § 103 requires consideration of “the scope and contents of the prior art” in the context of the level of the person of ordinary skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 13-14 (1966). Based on Brockett’s disclosure that it is conventional to include surfactants in laundry detergents (17, l. 15 to 19, l. 25), and those in Appellants’ own application (8:1-28), we conclude that this is the type of choice a skilled worker routinely would have made in formulating a detergent at the time the invention was made. We affirm the rejection of claim 10.

### *Claim 11*

Claim 11 is dependent on claim 1. It further requires that the composition comprise “from about 0.1wt% to about 5wt% polymeric polycarboxylate.”

Brockett discloses at 30, ll. 14-21:

Flocculating agents may be present in the compositions of the invention in amounts of up to 10% by weight, based on the weight of the clay. Suitable flocculating agents include polymers, for example long chain polymers and copolymers comprising repeating units

derived from monomers such as ethylene oxide, acrylamide, acrylic acid, dimethylaminoethyl methacrylate, vinyl alcohol, vinyl pyrrolidone, ethylene imine and mixtures thereof.

The Examiner asserts “polyacrylates are taught to be useful flocculants, as mentioned in the rejection. Polyacrylates are polymeric polycarboxylates. Determining the flocculance-effective amount of a disclosed flocculant would be an obvious expedient.” Answer 6.

Appellants do not challenge the Examiner’s assertion that the claimed polycarboxylates correspond to the polyacrylates described by Brockett. However, they argue, but offer no explanation, that Brockett does not “teach, suggest or recognize a detergent composition comprising from about 0.1wt% to about 5wt% polymeric polycarboxylate.” Br. 10.

We concur with the Examiner that the claimed subject matter would have been obvious to the skilled worker at the time the invention was made. Brockett teaches that the flocculating agent can be “up to 10% by weight, based on the weight of the clay.” Brockett at 30, l. 15. With a composition having about 10% by weight of clay (*id.* at 6, l. 30 to 7, l. 1), this would mean about 1% by weight of a polycarboxylate, which falls within the claimed range of “from about 0.1wt% to about 5wt%.” When there is a range disclosed in the prior art, and the claimed invention overlaps or falls within that range, there is a presumption of obviousness. *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ2d 1379, 1382 (Fed. Cir. 2003); *Iron Grip Barbell Co. v. USA Sports*, 392 F.3d 1317, 1322, 73 USPQ2d 1225, 1228 (Fed. Cir. 2004). For the foregoing reason, we affirm the rejection of claim 11.

*Claims 17, 25, and 26*

Claims 17, 25, and 26, which are dependent on claim 1, further define the PDMS to have a specific viscosity (claims 17 and 25) and average primary droplet size (claim 26). The Examiner states that the claims “are drawn to the physical characteristics of a starting material which is no longer present in that form in the claimed final product.” Answer 6. Appellants argue that Brockett does not disclose or suggest a detergent composition comprising pre-emulsified PDMS having the claimed properties. Br. 10-11; Reply Br. 6-7. They assert that “one of ordinary skill in the art will recognize that the viscosity of a particular ingredient to the claimed detergent composition will provide an effect and contribute to the physical properties of the composition.” Reply Br. 7.

As previously discussed, we find that the Examiner reasonably presumed that pre-emulsified PDMS is not present in the claimed final product. Appellants have not provided evidence to support their assertions that the “viscosity” will “effect and contribute to the physical properties of the composition.” Consequently, we affirm the rejection of claims 17, 25, and 26.

OTHER ISSUES

If prosecution of this application is resumed, we suggest that the Examiner consider U.S. Pat. 6,020,303 which was cited in the specification on p. 8, l. 24. It discloses combinations of alkyl sulfate and alkyl benzene sulfonate surfactants (Col. 6, ll. 40-60) that may be pertinent to instant claim 10.

TIME PERIOD

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

Eric Grimes	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
Nancy J. Linck	)	
Administrative Patent Judge	)	APPEALS AND
	)	
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