

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

Paper No. 39

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TAKAYUKI ARAKI, NOBUHIKO TSUDA,
and MASAHIRO KONDO

Appeal No. 2003-1926
Application No. 09/095,842

HEARD: March 2, 2004

Before GARRIS, OWENS, and TIMM, *Administrative Patent Judges*.
TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal involves claims 6-17, which are all of the claims pending in this application.

We have jurisdiction under 35 U.S.C. § 134.

INTRODUCTION

The claims are directed to an aqueous dispersion of a vinylidene fluoride (VdF) polymer and to the method of preparing a paint composition with the dispersion. Claims 6, 12, and 15 are illustrative:

6. An aqueous dispersion of a vinylidene fluoride polymer, which comprises a vinylidene fluoride polymer having an average particle size of not more than 200 nm and a surfactant, wherein a solid content is from 30 to 50% by weight, a content of the surfactant is not more than 1% by weight on the basis of water, and the surfactant consists essentially of at least one of a fluorine-containing surfactant.

12. An aqueous dispersion of a vinylidene fluoride polymer, which comprises a vinylidene fluoride polymer having an average particle size of not more than 320.1 nm, wherein a solid content is from 30 to 50% by weight, and a content of a fluorine-containing surfactant is not more than 1% by weight on the basis of water.

15. An aqueous dispersion of a vinylidene fluoride polymer, which comprises a vinylidene fluoride polymer having an average particle size of not more than 196.3 nm, wherein a solid content is from 30 to 50% by weight, and a content of a fluorine-containing surfactant is not more than 2% by weight on the basis of water.

All of the claims are rejected under 35 U.S.C. § 112, ¶ 1 as follows:

1. Claims 6-11 stand rejected for lack of enablement.
2. Claims 6-17 stand rejected for lack of written descriptive support.

We affirm with regard to the rejection based on lack of enablement, but reverse with regard to the rejection based on lack of written description. Our reasons follow.

OPINION

Enablement

The problem with regard to enablement is one of claim scope. As pointed out by the Examiner, the specification indicates that a non-ionic, non-fluorine-containing surfactant is critical or essential to the practice of the invention (Answer, p. 3), yet the claims do not require the presence of a non-ionic, non-fluorine-containing surfactant.

The Examiner's conclusion is consistent with both what is stated in the specification and with what Appellants argued in the parent application (Serial No. 08/612, 865, now issued as U.S. Patent 5,925,705) as to the general understanding of those of ordinary skill in the art. As stated in the argument presented in the parent application: “[a]t the time of applicants’ invention (the filing date of the priority application), the general understanding [of] those skilled in the art was that the particle size of the emulsion-polymerized PVdF particle became smaller with increase of amount of surfactant and with decrease of polymer (solid) content.” (Response under 37 C.F.R. § 1.115 filed May 2, 1997 in Application Serial No. 08/612,865). According to Appellants, this fact is discussed in the specification when discussing the prior publications. Appellants pointed to the following disclosures:

(1) A disclosure within Koubunishi Ronbu Shu, Vol. 36, No. 11 (1979) that states that “when a large amount of surfactants of various kinds is used in emulsion polymerization, particles of a polymer latex become smaller” (specification, p. 2, ll. 17-24 in both the instant application and the parent application); and

(2) A statement to the effect that “[u]sually the particle size of a latex tends to increase together with a polymer concentration, and when the fluorine-containing surfactant is used solely and if its amount is not more than 1 % by weight, there cannot be obtained a particle size of not more than 200 nm if the solid content is assumed to be 30 to 50 % by weight.” (specification, p. 3, ll. 4-10 in both the instant application and the parent application).

Appellants also looked to the data resulting from Comparative Examples 4 and 5 for support for their statement of what was general knowledge in the prior art. According to Appellants, those examples show that when the amount of perfluoro (octanoic acid) (PFOA), i.e., fluorine-containing surfactant, increases from 0.1 to 2.0 %, the average particle size decreases from 320.1 nm to 196.3 nm, though the polymer (solid) content is not changed much (from 34.6% to 31.5%). What we conclude from the evidence as a whole is that, according to the general knowledge in the prior art, one would need to employ more than 1 % by weight of the fluorine-containing surfactant to obtain particle sizes at or below 200 nm in a 30-50 % by weight solids content VdF dispersion.

Against the above backdrop, the specification further describes Appellants’ contribution to the art as the reduction of fluorine-containing surfactant to levels of less than 1 wt. % through the addition of a non-ionic, non-fluorine-containing surfactant. This is the only method disclosed by Appellants for obtaining the 30-50 wt. % solids content and 200 nm or less particle size at the claimed low levels of fluorine-containing surfactant (specification, p. 4, ll. 13-21; p. 6, ll. 17-37). The data of the Examples and Comparative Examples illustrate that the claimed combination of

particle size and solids content is not obtained without the non-ionic, non-fluorine-containing surfactant (MYS40) where less than 1 wt. % of the fluorine-containing surfactant (PFOA) is added.

The present case is one in which there is only one method disclosed for forming the claimed product and, in that described method, the presence of a non-ionic, non-fluorine-containing surfactant is essential for forming the dispersion with the particle size, solids content, and fluorine-containing surfactant level claimed. In addition, the interpretation of the specification as indicating that the non-ionic, non-fluorine-containing surfactant is essential is reasonable in light of the evidence of what those of ordinary skill in the art generally understood about VdF dispersions and the tenor of the specification as a whole as to what Appellants have invented. In this situation, it is eminently fair and reasonable to shift the burden to the Appellants to show that undue experimentation would not be required to practice the invention for the full scope of the claims. *In re Sichert*, 566 F.2d 1154, 1161, 196 USPQ 209, 215 (CCPA 1977).

Appellants argue that their specification, at page 4, lines 7-12, describes a dispersion using only a fluorine-containing surfactant in the amount of not more than 1% by weight on the basis of water (Brief, p. 8). This argument is not persuasive because the paragraph Appellants refer to only states that the invention relates to an aqueous dispersion of a VdF polymer having the specified particle size, solids content, and less than 1 wt. % fluorine-containing surfactant. This paragraph does not explain how to make the dispersion nor does it indicate that only

fluorine-containing surfactant is present in the dispersion. In fact, the next paragraph explains that the invention is accomplished through the additional use of non-ionic, non-fluorine-containing surfactant (specification, p. 4, ll. 13-21). While there is a description of a dispersion having less than 1 wt. % fluorine-containing surfactant, what is required for enablement is a disclosure in the specification teaching those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation. *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). The paragraph at page 4, lines 7-12 does not provide the necessary enabling disclosure of how to make the dispersion for the full scope of the claim.

Appellants next argue that it is within the skill in the art to modify the parameters set forth in Comparative Example 3 so as to prepare a particle size within the 200 nm or less range of claims 6-11 (Brief, pp. 8-9). Comparative Example 3 uses less than 1 wt. % fluorine-containing surfactant as required by the claims and includes no non-ionic, non-fluorine-containing surfactant, but the particle size obtained (234.5 nm) is outside the claimed range. That is why the example is a “comparative example.” Other than the addition of non-ionic, non-fluorine-containing surfactant, the specification offers no guidance as to how to modify the parameters of the process of Comparative Example 3 in order to obtain the required particle size. Nor is there convincing evidence, on this record, indicating that one of ordinary skill in the art would understand, without performing undue experimentation, how to modify the parameters in any other way to obtain the claimed dispersion.

Appellants further rely upon a declaration, which they designate the “first Tsuda declaration,” which they say demonstrates enablement (Brief, p. 9). But what the first Tsuda Declaration demonstrates is merely that one of the inventors was able to take the dispersion of Comparative Example 5, which contains 2 wt. % fluorine-containing surfactant, an amount above the claimed 1 wt. %, and perform additional dilution and concentration steps to obtain a dispersion with less than 1 wt. % fluorine-containing surfactant as well as the claimed particle size and solids content. That one of the inventors could, at some point in time, after an unknown amount of experimentation, obtain the dispersion without non-ionic, non-fluorine-containing surfactant is not particularly probative on the question of whether undue experimentation would be required of one of ordinary skill in the art to make dispersion for the full scope of the claims at the time of the invention.

Further with regard to the first Tsuda Declaration, the process used involves dilution and concentration steps performed after preparing the dispersion of Comparative Example 5. Appellants acknowledge that the dilution and concentration steps are not described in their specification (Brief, p. 10). But they argue that any person skilled in the art would know how to so dilute or concentrate an aqueous dispersion. The problem with this argument is that dilution and concentration are just two of a myriad of known procedures that one of ordinary skill in the art could theoretically perform on a dispersion. The Tsuda Declaration indicates that the application of those steps to a dispersion containing 2 wt. % fluorine-containing surfactant would result in a reduction of fluorine-containing surfactant to less than 1 wt. %. Just how one of

ordinary skill in the art would have known that such a reduction in concentration would occur is unclear. There is neither guidance in the specification that such a result will occur nor, on its face, is such a result predictable. Enablement cannot be based on such a level of unpredictability. *See In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970)(The scope of enablement varies inversely with the degree of unpredictability of the factors involved). Nor would experimenting with a number of known processes to see which might be successful involve routine experimentation in the absence of some guidance as to what direction to proceed. Appellants have failed to establish that the required experimentation is not undue experimentation.

Appellants lastly acknowledge that the question of whether the non-ionic, non-fluorine-containing surfactant must be present in order to obtain a particle size below 200 nm could possibly be pertinent to the issue of whether claims 6-11 read on an inoperative dispersion. But Appellants argue that “it is not a function of the claims to specifically exclude possible inoperative combinations.” (Brief, p. 16). Appellants cite a number of cases to support this proposition (Brief, p. 16). But the present case differs from those cases in that the only operative embodiment disclosed in the specification is the one containing non-ionic, non-fluorine-containing surfactant. The surfactant is essential, according to the specification, in order to obtain an operative dispersion within the parameters of the claims. Appellants must limit their claims to what they have disclosed in their specification as essential. *See In re Mayhew*, 527 F.2d 1229, 1232-34, 188 USPQ 356, 357-59 (CCPA 1976).

The purpose of the enablement requirement is to “ensure[] that the public knowledge is enriched by the patent specification to a degree at least commensurate with the scope of the claims.” *Crown Operations Int’l. Ltd. v. Solutia, Inc.*, 289 F.3d 1367, 1378-79, 62 USPQ2d 1917, 1924 (Fed. Cir. 2002)(quoting *Nat’l Recovery Techs., Inc. v. Magnetic Separation Sys.*, 166 F.3d 1190, 1196, 49 USPQ2d 1671, 1675 (Fed. Cir. 1999)). For a VdF dispersion of 200 nm or less particle size and 30-50 wt % solids content, and less than 1 wt. % fluorine-containing surfactant, Appellants’ disclosed contribution is limited to the additional presence of a non-ionic, non-fluorine-containing surfactant. That is what the specification indicates is enabled within the meaning of 35 U.S.C. § 112, ¶ 1 and Appellants do not provide convincing evidence that the claimed dispersion could have been made without the non-ionic, non-fluorine-containing surfactant by one of ordinary skill in the art without undue experimentation at the time of the invention.

We conclude that the Examiner has established a *prima facie* case of lack of enablement under 35 U.S.C. § 112, ¶ 1 which has not been sufficiently rebutted by Appellants.

Written Description

The Examiner rejects all the claims as containing subject matter which was not described in the specification (Answer, pp. 3-4).

For claims 6-11, the Examiner directs us to pages 3, lines 6-12, page 4, lines 13-21, and page 6, lines 25-37 as evidence that there is lack of descriptive support. For claims 12-14, the Examiner states that “[t]here is no mention in the specification of ‘an average particle size of not

more than 320.1 nm' and that [the] particle size is outside the limits of the claimed invention.”

The reasoning with respect to claims 15-17 is similar to that used to reject claims 12-14.

The Examiner has the initial burden of presenting evidence of reasons why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims. *In re Wertheim*, 541 F.2d 257, 263, 191 USPQ 90, 97 (CCPA 1976).

With regard to claims 6-11, we note that both original claim 1 and the specification at page 4, lines 7-12 convey the concept that the invention is directed to a VdF dispersion having a 200 nm or less particle size, a 30-50 wt. % solids content, and not more than 1 wt. % fluorine-containing surfactant. That is enough for written descriptive support. *Hyatt v. Boone*, 146 F.3d 1348, 1352, 47 USPQ2d 1128, 1130 (Fed. Cir. 1998), *cert. denied*, 119 S. Ct. 1032 (1999); *In re Anderson*, 471 F.2d 1237, 1244, 176 USPQ 331, 336 (CCPA 1973). The portions of the specification cited by the Examiner do not negate what is disclosed in original claim 1 or what is disclosed on page 4, lines 7-12 of the specification.

With respect to claims 12-17, these claims, as pointed out by Appellants (Brief, pp. 24-28), are supported by Comparative Examples 4 and 5 respectively. We understand the Examiner's reluctance to find supporting disclosure for these claims as they are not referred to in the specification as part of Appellants' invention. However, as stated in *In re Kaslow*:

The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language.

In re Kaslow, 707 F.2d 1366, 1375, 217 USPQ 1089, 1096 (Fed. Cir. 1983)(citations omitted).

The fact is that dispersions having the claimed parameters are, indeed, described in a way that indicates that Appellants had possession of them at the time the application was filed even if they are disclosed in the context of comparative examples rather than inventive examples.

We conclude that the Examiner has failed to establish that the claims lack written descriptive support under 35 U.S.C. § 112, ¶ 1.

CONCLUSION

To summarize, the decision of the Examiner to reject claims 6-11 as failing to meet the enablement requirement of 35 U.S.C. § 112, ¶ 1 is affirmed, but the decision of the Examiner to reject claims 6-17 as failing to meet the written description requirement of the statute is reversed.

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

AFFIRMED-IN-PART

TERRY J. OWENS
Administrative Patent Judge

CATHERINE TIMM
Administrative Patent Judge

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BRADLEY R. GARRIS, *Administrative Patent Judge*, concurrence-in-part,
dissent-in-part:

I concur with the reversal of the examiner's rejection of claims 6-17 as failing to satisfy the written description requirement in the first paragraph of section 112. However, I respectfully dissent from the majority's affirmance of the rejection of claims 6-11 as failing to satisfy the enablement requirement of this paragraph. This non-enablement rejection is improper for the reasons set forth in the appellants' brief and below.

I begin my dissent by clarifying two pivotal aspects of the enablement issue before us.

First, though not expressly stated by the majority, claims 6-11 do not exclude a non-ionic, non-fluorine-containing surfactant. Rather, these claims broadly encompass aqueous dispersions having characteristics of the type here claimed including an embodiment which contains non-ionic, non-fluorine-containing surfactant as well as an embodiment which does not contain this surfactant. The former embodiment is indisputably enabled. It follows that the non-enablement viewpoint of my colleagues relates only to that portion of claim scope which encompasses the latter embodiment.

Second, contrary to the impression made by the majority's opinion, the appellants' specification does not disclose that the presence of non-ionic, non-fluorine-containing surfactant is essential to formation of the here claimed aqueous dispersions. While the specification discloses that these dispersions form in the presence of this surfactant, the specification contains no teaching whatsoever that these dispersions are incapable of forming in the absence of such surfactant. In point of fact, therefore, my colleagues' non-enablement position is based only on

their opinion that the appellants' specification disclosure should be interpreted as requiring the presence of a non-ionic, non-fluorine-containing surfactant.

I simply do not believe that the record before us supports a determination that one having an ordinary level of skill in this art would interpret the appellants' specification in the manner urged by the majority. Relevant to this issue is the fact that the specification teaches the use of non-ionic, non-fluorine-containing surfactant as an exemplary technique for preparing the appellants' aqueous dispersion, vis-à-vis, "[t]he aqueous dispersion . . . of the present invention can be prepared, for example, by emulsion-polymerizing VdF monomer or a monomer mixture containing VdF under coexistence of the above-mentioned fluorine-containing surfactant in an amount of not more than 1% by weight on the basis of water and a trace amount of the nonionic, non-fluorine-containing surfactant" (specification, page 6, lines 17-24; emphasis added). This teaching militates against the majority's belief that non-ionic, non-fluorine-containing surfactant is required in order to prepare the appellants' claimed aqueous dispersions.

In support of this belief, my colleagues rely upon the specification disclosure (and corresponding argument in the parent application) concerning the use of more than the here claimed amount of fluorine-containing surfactant in order to form an aqueous dispersion of the type defined by claims 6-11. However, this reliance is undermined by the fact that the disclosure in question is expressly categorical. Specifically, the specification, page 3, disclosure referred to by the majority (slip op., page 4) expressly states that particle size "[u]sually" (emphasis added) tends to increase outside the here claimed parameters when using not more than 1% by weight of

fluorine-containing surfactant alone. Similarly, lines 25-29 on specification page 6 explicitly disclose that “it is usually necessary to use a large amount of a fluorine-containing surfactant” (emphasis added) in order to prepare an aqueous dispersion of the type here claimed. In light of the categorical term “usually,” I believe these disclosures would be interpreted by an artisan with ordinary skill as teaching that the appellants’ aqueous dispersions can be prepared (i.e., occasionally albeit not “usually”) using not more than 1% by weight of fluorine-containing surfactant alone in accordance with the claims under review.

Further, I believe the artisan would be entirely capable of so-preparing the here claimed aqueous dispersion, and this belief is supported by the specification examples and by the Tsuda declaration of record. This is because the specification examples plainly show a wide variety of particle sizes and solid contents based upon parameters other than surfactant type and amount, namely, the parameters of vinylidene fluoride monomer content and concentration (e.g., see the Table on page 13 of the subject specification). It is, therefore, my perspective that the artisan would have regarded these last mentioned parameters as being result-effective vis-à-vis preparing at least sometimes, though not “usually,” the aqueous dispersions under consideration using not more than 1% by weight of fluorine-containing surfactant alone. Analogously, the Tsuda declaration evinces, at minimum, that a person of ordinary skill in this art (i.e., declarant Tsuda) was able to prepare the here claimed aqueous dispersions without use of the non-ionic, non-fluorine-containing surfactant which my colleagues (and the examiner) consider to be required.

With the foregoing in mind, it is appropriate to here stress that nothing more than objective enablement is required by the first paragraph of section 112, and accordingly it is irrelevant whether the enablement teaching is provided through broad terminology or illustrative examples. In re Wright, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). In the case before us, the appellants indisputably have provided objective enablement via illustrative examples for the embodiment encompassed by claims 6-11 wherein the here claimed aqueous dispersion includes a fluorine-containing surfactant in combination with a non-ionic, non-fluorine-containing surfactant. Presumptively as a matter of law, the appellants also have provided objective enablement for the additional embodiment encompassed by these claims wherein the aqueous dispersion includes the fluorine-containing surfactant only.

For the reasons set forth in the brief and above, neither the majority nor the examiner has provided an acceptable, reasonable explanation as to why the appellants' claimed scope of protection is not adequately enabled by the specification disclosure. Id. To the contrary, the record of this appeal goes beyond the legal presumption of enablement by presenting evidence than an artisan would be capable of preparing the appellants' aqueous dispersion without using a non-ionic, non-fluorine-containing surfactant. Under these circumstances, the non-enablement rejection should be reversed..

Therefore, I dissent from the decision of the majority to affirm the examiner's section 112, first paragraph, rejection of claims 6-11 as being non-enabled.

BRADLEY R. GARRIS
Administrative Patent Judge

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