

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

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN JOSEPH RABASCO,
RONALD JOSEPH PANGRAZI
and RICHARD HENRY BOTT

Appeal 2006-2931
Application 10/447,009
Technology Center 1700

Decided: February 8, 2007

Before PETER F. KRATZ, JEFFREY T. SMITH, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Applicants appeal from the final rejection of claims 1 to 20 under.¹ We have jurisdiction under 35 U.S.C. § 134(b) (2002).

¹ An oral hearing was held on January 11, 2007.

We AFFIRM.

Appellants' invention relates to a nonwoven product comprising the nonwoven web of fibers bonded together with a sufficient amount of binder. The binder comprises a polymer containing vinyl acetate, ethylene, and a cross-linking monomer. According to Appellants, the improvement in the nonwoven product resides in the use of a polymer having a crystalline melting point (T_m) ranging from 35 to 90°C (Br. 2). Claim 1, as presented in the Brief, appears below:

1. In a nonwoven product comprising a nonwoven web of fibers bonded together with a polymer comprised of polymerized units of vinyl acetate, ethylene, and polymerized units of a crosslinking monomer at a binder add-on which is sufficient to bind the fibers together to form a self-sustaining web, the improvement which comprises:

said polymer comprised of an aqueous-based ethylene-vinyl acetate polymer emulsion comprised of polymerized units of crystalline ethylene segments, said polymer prepared by emulsion polymerizing vinyl acetate, ethylene, and said cross-linking monomer in the presence of a stabilizing system, and, further, said polymer having a crystalline melting point ranging from 35 to 90 °C as measured by differential scanning calorimetry at a heat rate of 20°C per minute.

The Examiner relies on the following references in rejecting the appealed subject matter:

Mudge	US 4,702,957	Oct. 27, 1987
Eknoian	US 2003/0073777 A1	Apr. 17, 2003

The Examiner has entered the following grounds of rejection:
Claims 1-20 stand rejected under 35 U.S.C. §102 (b and e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Mudge or Eknoian.

I.

Claims 1-20 stand rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Mudge.

ISSUE

The Examiner contends that Mudge describes a nonwoven product comprising a nonwoven web of fibers bonded together comprising emulsion polymerized units of vinyl acetate, ethylene, and polymerized units of a cross-linking monomer. The Examiner contends that the nonwoven product of the reference is prepared by a similar process and comprises similar components as the claimed invention. The Examiner recognizes the reference does not disclose the crystalline segments in the polymer property or the crystalline melting point of the polymer property as specified by the claimed invention. The Examiner concludes that it is reasonable to presume that the same properties would be possessed by the nonwoven product of Mudge (Answer 4).

Appellants contend that the Mudge reference does not include any teaching of crystalline ethylene segments in the polymers or the crystalline melting point of the polymers disclosed therein. Appellants contend the composition of the polymer, alone, is not a viable indicator as to the properties of the polymer. The crystalline structure of polymers depend upon the structure of the polymers and the manner in which ethylene is incorporated into the polymers to form the crystalline structure (Br. 5). Appellants contend the method by which Mudge produces the polymer indicates to a person of ordinary skill in the art that the polymers would not contain crystalline ethylene segments (Br. 5). In support of this position, Appellants refer to Examples 10-13 of the present Specification. Appellants contend that it cannot be argued that a polymer will inherently have certain

properties based solely on the ethylene content (Br. 6). Appellants further contend that the high wet to dry tensile strength ratio of nonwoven webs bonded with the polymers disclosed by Mudge were not achieved because the method employed by Mudge to produce the polymers would not result in ethylene crystalline segments (Br. 6).

The first issue before us is whether Appellants have shown that the Examiner erred in rejecting the claims under 35 U.S.C. §102(b) or in the alternative under 35 U.S.C. §103(a). The issue turns on whether the Examiner has established a reasonable belief that the property or characteristic recited in the claims would have been inherent to the product or process, and whether the Appellants have adequately rebutted the Examiner's position by showing that the characteristic or property is not possessed in the cited reference. Specifically, the issue is whether the Examiner has shown that the nonwoven product of Mudge comprising a nonwoven web of fibers bonded together with an emulsion polymerized polymer comprising vinyl acetate, ethylene, and a polymerized cross-linking units of a monomer would be reasonably expected to inherently possess “polymerized units of crystalline ethylene segments” and the “polymer having a crystalline melting point ranging from 35 to 90°C as measured by differential scanning calorimetry at a heat rate of 20°C per minute” properties, and, if so, whether Appellants have established that the product of Mudge does not possess the recited characteristics.

FINDINGS OF FACT

The following facts are relevant to the issues I and II:

Appellants invented a nonwoven product comprising the nonwoven web of fibers bonded together with a sufficient amount of binder. The

binder comprises a polymer containing vinyl acetate, ethylene, and a cross-linking monomer (Specification [0011]).

Appellants report an improvement in the nonwoven product resides in the use of a polymer having a crystalline melting point (T_m) ranging from 35 to 90°C (Specification [0011]).

Factors leading to the crystalline ethylene domains within a polymer include the pressure and temperature of polymerization (Specification [0023]).

Redox systems can be used for polymerization over a wide range of temperatures generally 60°C or lower. Suitable redox systems are based upon sulfoxylates and peroxides including sodium formaldehyde sulfoxylate and ascorbic acid and hydrogen peroxide. (Specification [0024]).

Example 2 describes a redox system polymerization at a temperature of 60°C employing sodium formaldehyde sulfoxylate. (Specification [0041-0042]).

Suitable pressure for introduction of ethylene during the polymerization process is below 2000 psig. Preferred pressure for polymerization ranges from about 500 psig to 1800 psig (Specification 3, section [0027]).

The following facts are relevant to issue I:

Mudge describes nonwoven products comprising the nonwoven web of fibers bonded together with a binder that comprises an emulsion polymerized polymer containing vinyl acetate, ethylene, and a cross-linking monomer meeting all the limitations of claim 1, except for the description of “polymerized units of crystalline ethylene segments” and the “polymer

having a crystalline melting point ranging from 35 to 90°C as measured by differential scanning calorimetry at a key rate of 20°C per minute” (col. 1, ll. 44 - 56).

Example 1 of Mudge describes a redox polymerization system that employs a reactor charged to 750 psi, temperatures of about 50°C, and sodium formaldehyde sulfoxylate (col. 6, ll. 1-6).

PRINCIPLES OF LAW

When relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. *See Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Patent App. & Int. 1990). The mere recitation of a property or characteristic not disclosed by the prior art does not necessarily confer patentability to a composition or a method of using that composition. *See In re Skoner*, 517 F.2d 947, 950, 186 USPQ 80, 82 (CCPA 1975). Where the Examiner establishes a reasonable belief that the property or characteristic recited in the claims would have been inherent to the product or process, the burden of proof shifts to Appellants to show that this characteristic or property is not possessed by the prior art. *See In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977); *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

ANALYSIS

We determine that the Examiner has established a reasonable belief that the nonwoven woven product of Mudge inherently possesses the claimed characteristics by finding that the emulsion polymerization is performed at a pressure (750 psi) and redox conditions that fall within the

range identified by the present specification for producing a polymer with crystalline ethylene units. Appellants have not sufficiently rebutted the Examiner's determination that the binder of Mudge is composed of similar materials and polymerized under similar conditions as the claimed invention. As such, the Examiner has met the required burden in this case, and Appellants have failed to meet their burden to establish that the claimed characteristics are not possessed by the Mudge reference.

CONCLUSION OF LAW

On the record before us, the Examiner has met the required burden in this case, and Appellants have failed to meet their burden to establish that the claimed characteristics are not possessed by the Mudge reference. Thus, the Examiner's rejection is supported by a legally sufficient basis for holding that the claimed subject would have been anticipated within the meaning of §102(b) or, in the alternative, obvious within the meaning of § 103(a).

II.

Claims 1-20 stand rejected under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Eknoian.

ISSUE

The Examiner contends that Eknoian describes a nonwoven product comprising a nonwoven web of fibers bonded together comprising emulsion polymerized units of vinyl acetate, ethylene, and polymerized units of a cross-linking monomer. The Examiner contends that the nonwoven product of the reference is prepared by a similar process and comprises similar components as the claimed invention. The Examiner recognizes the reference does not disclose the crystalline segments in the polymer property

or the crystalline melting point of the polymer property as specified by the claimed invention. The Examiner concludes that it is reasonable to presume that the same properties would be possessed by the nonwoven product of Mudge (Answer 4).

Appellants contend that the Eknoian reference does not include any teaching of crystalline ethylene segments in the polymers or the crystalline melting point of the polymers disclosed therein. Appellants contend the composition of the polymer alone is not a viable indicator as to the properties of the polymer (Br. 3). The crystalline structure of polymers is dependent upon the structure of the polymers and the manner in which ethylene is incorporated into the polymers to form the crystalline structure (Br. 5). Appellants contend the method by which Eknoian produces the polymer indicates to a person of ordinary skill in the art that the polymers would not contain crystalline ethylene segments (Br. 5). In support of this position, Appellants refer to Examples 10-13 of the present Specification and the Dr. Rabasco Declaration filed under 37 C.F.R. § 1.132. Appellants further contend that the wet to dry tensile strength ratio of nonwoven webs bonded with the polymers disclosed by Eknoian were significantly below the wet/dry strength ratio for Appellants nonwoven web (Br. 4-5).

The second issue before us is whether Appellants have shown that the Examiner erred in rejecting the claims under 35 U.S.C. §102(e) or, in the alternative, under 35 U.S.C. §103(a). The issue turns on whether the Examiner has established a reasonable belief that the property or characteristic recited in the claims would have been inherent to the product or process, and whether the Appellants have adequately rebutted the Examiner's position by showing that the characteristic or property is not

possessed in the cited reference. Specifically, the issue is whether the Examiner has shown that the nonwoven product of Eknoian comprising a nonwoven web of fibers bonded together with an emulsion polymerized polymer comprising vinyl acetate, ethylene, and a polymerized cross-linking units of a monomer that would reasonably be expected to possess “polymerized units of crystalline ethylene segments” and the “polymer having a crystalline melting point ranging from 35 to 90°C as measured by differential scanning calorimetry at a key rate of 20°C per minute” properties and, if so, whether Appellants have established that the product of Eknoian does not possess the recited characteristics.

FINDINGS OF FACT

The following facts are relevant to issue II:

Eknoian describes nonwoven products comprising the nonwoven web of fibers bonded together with a binder that comprises an emulsion polymerized polymer containing vinyl acetate, ethylene, and a cross-linking monomer meeting all the limitations of claim 1, except for the description of “polymerized units of crystalline ethylene segments” and the “polymer having a crystalline melting point ranging from 35 to 90°C as measured by differential scanning calorimetry at a key rate of 20°C per minute” (Section [0052]).

Eknoian describes the preferred reactor pressure for polymerization of ethylene ranges from 700 to 1400 psi (Section [0050]).

Eknoian describes redox polymerization systems that employ temperatures of about 50° C and sodium formaldehyde sulfoxylate in Examples 11-20 (Section [0097]).

The discussion of Example 13 of Eknoian does not include an analysis of the crystalline segments and/or the crystalline melting point of the disclosed composition and how these properties relate to wet/dry tensile strength (Br. 4-5).

Dr. Rabasco's Declaration filed under 37 C.F.R. § 1.132 does not provide a first-hand detailed showing as to how the Declarant has reached the provided opinion as to a reproduction of Examples 11 and 14 of Eknoian (Paragraph 7).

PRINCIPLES OF LAW

In addition to the principles of law discussed above, we add the following:

Appellants must discuss or explain the data in the Specification and why it is believed that the data supports the non-obviousness of the claimed subject matter. The burden is on Appellants to establish why the comparative data establishes unexpected results. *See In re Klosak, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972).*

The data relied upon by Appellants must be commensurate in scope with the claimed invention. *In re Greenfield, 571 F.2d 1185, 1189, 197 USPQ 227, 230 (CCPA 1978).*

ANALYSIS

We determine that the Examiner has established a reasonable belief that the nonwoven woven product of Eknoian inherently possesses the claimed characteristics by finding that the emulsion polymerization is carried out at a pressure (700 to 1400 psi) that falls within the range identified by the present specification for producing a polymer with crystalline ethylene units. Appellants have not sufficiently rebutted the

Examiner's determination that the binder of Eknoian is composed of similar materials and polymerized under similar conditions as the claimed invention so as to result in a polymer with the claimed properties. Dr. Rabasco's Declaration filed under 37 C.F.R. § 1.132 is insufficient to rebut the Examiner's determination because the determination as to how the Declarant has reached the opinion cannot be ascertained from the Declaration. The Declaration does not specifically provide the test conditions that were employed in reproducing the examples identified in paragraph 7 of the Declaration. The Declaration, at paragraphs 9 and 10, reports a polymer reproduction that includes amounts of ethylene and N-Methylol Acrylamide (NMA) that are not the same as that reported in Table 1 of Eknoian for Examples 11 and 14. Nor does the Declaration address the apparent viscosity discrepancies between the values reported for Examples 11 and 14 of Eknoian and the Declarant's procured reproductions. The discussion of Example 13 of Eknoian does not include analysis of the crystalline segments and/or the crystalline melting point of the disclosed composition and how these properties relate to wet/dry tensile strength. The data relied upon by Appellants in the Specification merely shows a few compositions with crystalline ethylene segments. Also, the Comparative Examples 10-12 in the Specification have not been adequately described in terms of the process parameters used for forming the compositions so as to ascertain how closely they resemble the method of preparation used in forming the example compositions of Eknoian so as to be truly comparative. The burden is on Appellants to establish the significance of the comparative data. *See In re Klosak*, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972).

Appeal 2006-2931
Application 10/447,009

We further agree with the Examiner that the data relied upon by Appellants is not commensurate in scope with the claimed invention (Answer 6). *See In re Greenfield*, 571 F.2d at 1185, 197 USPQ at 227. Appellants have tested only a few compositions, as exhibited in the record. However, the claims on appeal are much broader.

CONCLUSION OF LAW

On the record before us, the Examiner has met the required burden in this case, and Appellants have failed to meet their burden to establish that the claimed characteristics are not possessed by the Eknoian reference. Thus, the Examiner's rejection is supported by a legally sufficient basis for holding that the claimed subject matter would have been anticipated within the meaning of §102(e) or, in the alternative, obvious within the meaning of § 103(a).

DECISION

The Examiner's rejections of claims 1-20 are 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)(1)(iv) (2004).

AFFIRMED

clj

Air Products and Chemicals, Inc.
Patent Department
7201 Hamilton Boulevard
Allentown, PA 18195-1501