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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* JEFFREY WILBUR, DENISE LINDENMUTH,  
RAY E. DRUMRIGHT, DHARAKUMAR METLA,  
DAVID L. MALOTKY, and BERNHARD KAINZ

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Appeal 2019-006744  
Application 14/646,512  
Technology Center 1700

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Before TERRY J. OWENS, DONNA M. PRAISS, and MICHAEL G.  
McMANUS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1, 8–18, and 20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

CLAIMED SUBJECT MATTER

The claims are directed to coating compositions and coated articles. Claim 1, reproduced below, is illustrative of the claimed subject matter:

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Dow Global Technologies LLC (Appeal Br. 3).

1. A coating composition comprising:  
from 50 to 85 percent of an aqueous dispersion based on a total weight of the coating composition, wherein the aqueous dispersion comprises a melt blending product of (a) a base polymer that is an alpha-olefin homopolymer or an alpha-olefin copolymer, wherein the alpha-olefin is selected from ethylene, propylene, 1-butene, 3-methyl-1-butene, 4-methyl-1-pentene, 3-methyl-1-pentene, 1-heptene, 1-hexene, 1-octene, 1-decene, and 1-dodecene, (b) a polymeric stabilizing agent, and (c) a compatiblizer, wherein the aqueous dispersion has a solid content from 15 weight percent to 70 weight percent based on a total weight of the aqueous dispersion, the solid content comprises from 50 to 85 percent by weight of the base polymer based on a total weight of the solids content, from 10 to 35 percent by weight of the stabilizing agent based on the total weight of the solids content, and from 2 to 15 percent by weight of the compatiblizer based on the total weight of the solids content;

an abrasion reducing composition comprising a polyethylene wax that is from 0.01 weight percent to 1.5 weight percent of the coating composition based on the total weight of the coating composition, wherein the polyethylene wax has a melting point of less than 113 °C as measured according to ASTM-D-127;

a solvent, wherein the solvent is from 3 weight percent to 20 weight percent of the coating composition based on the total weight of the coating composition;

a basic water composition comprising from 90 to 99.99 percent by weight water based on a total weight of the basic water composition and from 0.01 percent to 10 percent by weight of a base based on the total weight of the basic water composition, wherein the basic water composition is from 10 weight percent to 25 weight percent of the coating composition based on the total weight of the coating composition; and

a crosslinker, wherein the crosslinker is from 0.01 weight percent to 40 weight percent of the coating composition based on the total weight of the coating composition.

### REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Nakamoto	JP 8-207199 A	Aug 13, 1996
Shiba	US 6,777,096 B2	Aug. 17, 2004
Foster	US 2005/0009698 A1	Jan. 13, 2005
Jensen Moller	US 2006/0040061 A1	Feb. 23, 2006
Klier	US 2010/0143837 A1	June 10, 2010
Kainz	WO 2011/011707 A2	Jan. 27, 2011
POLYWAX	POLYWAX Polyethylenes	2011

### REJECTIONS

Claims 1, 8–18, and 20 stand rejected under 35 U.S.C. § 103(a) over 1) Kainz in view of Shiba, Klier, and POLYWAX; 2) Kainz in view of Shiba, Klier, Nakamoto, and Foster; and 3) Kainz in view of Shiba and Jensen Moller. Claim 20 also stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

### OPINION

Rejections under 35 U.S.C. § 103(a)

The Appellant states that claims 8–18 stand or fall with claim 1 (Appeal Br. 24, 32). We therefore limit our discussion to claims 1 and 20. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2013). Although additional references are applied in the second and third rejections, the Appellant relies upon the same arguments with respect to all three rejections (Appeal Br. 8–32). The

following discussion of the rejection over Kainz in view of Shiba, Klier, and POLYWAX, therefore, applies to all of the rejections.

Kainz discloses an aqueous dispersion coating composition comprising 15–99 wt% of one or more base polymers (pp. 5–18), 1–50 wt% of one or more stabilizing agents (pp. 18–22), one of which can be LICOCENE 6452 (p. 19), which is one of the Appellant’s compatibilizers (Spec. ¶ 36), polyethylene wax (pp. 24, 32), 30–75 vol% water (p. 23), one or more organic solvents (pp. 23–24)), a basic neutralizing agent (pp. 22–24, 32), and a crosslinking agent (pp. 24–29 ). The composition has a solids range of about 1–99 vol% (p. 23), can be formed by melt kneading (pp. 29–31), and is useful for coating cans (pp. 32–35). Kainz does not disclose the amount or melting point of the polyethylene wax or the amount of the one or more organic solvents.

Shiba discloses an aqueous polyolefin resin dispersion which comprises a specific polyolefin resin (preferred amount 1–60 wt%), a basic compound, and an aqueous medium, and is useful for forming an anticorrosion coating on metal (col. 2, l. 48 – col. 3, l. 60; col. 9, ll. 42–51). The aqueous medium can contain an organic solvent in an optimal amount of 3–30 wt% to promote water compatibilization of the polyolefin resin to reduce the diameter of the dispersed particles (col. 7, l. 66 – col. 8, l. 20; col. 9, ll. 7–41). The aqueous dispersion can contain less than 0.1 wt% of a non-volatile water-compatibilizing agent such as a polyethylene wax having a number average molecular weight not greater than 5,000, provided that it does not deteriorate the aqueous dispersion’s intrinsic properties (col. 1, ll. 46–52, 61–63; col. 15, ll. 22–27).

POLYWAX discloses polyethylene waxes having number average molecular weights of 1,000 or less and melting points of 113 °C or less.<sup>2</sup>

The Appellant argues that because Shiba's polyolefin terpolymer (col. 3, l. 60 – p. 3, l. 28) differs from the Appellant's alpha-olefin copolymer, Shiba is nonanalogous art (Appeal Br. 8–11).

The test of whether a reference is from an analogous art is first, whether it is within the field of the inventor's endeavor, and second, if it is not, whether it is reasonably pertinent to the particular problem with which the inventor was involved. *See In re Wood*, 599 F.2d 1032, 1036 (CCPA 1979).

The field of endeavor of both the Appellant (Spec. ¶ 4) and Shiba (col. 3, ll. 44–46) is coating compositions made from polyolefin-containing aqueous dispersions. Consequently, Shiba is analogous art.

The Appellant argues that Kainz and Shiba teach away from their combination because Kainz includes a polyethylene wax nonvolatile water-compatibilizing agent in the aqueous dispersion (pp. 24, 32) whereas Shiba does not add a nonvolatile water-compatibilizing agent to the aqueous dispersion (col. 2, ll. 50–57) (Appeal Br. 11–13).

Shiba discloses that the aqueous dispersion preferably contains no nonvolatile water-compatibilizing agent, but can contain such an agent in a proportion smaller than 0.1 wt% based on the amount of polyolefin resin as long as the effects of the aqueous dispersion are not impaired (col. 14, ll. 48–52). Thus, Shiba would have suggested, to one of ordinary skill in the art, adding to the aqueous dispersion less than 0.1 wt%, based on the polyolefin

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<sup>2</sup> A discussion of Klier is not necessary to our decision.

resin, of a nonvolatile water-compatibilizing agent such as polyethylene wax having a number average molecular weight no greater than 5,000 (col. 14, ll. 61–63, col. 15, ll. 22–27), to increase the compatibility of the polyolefin resin with water. Amounts of polyethylene wax less than 0.1 wt% include amounts within the Appellant’s recited range of 0.01–1.5 wt% (claims 1 and 20). Because the POLYWAX polyethylene waxes have number average molecular weights no greater than 5,000, one of ordinary skill in the art would have used them in Shiba’s aqueous dispersion. POLYWAX discloses that the waxes having number average molecular weights of 1,000 or less have melting points of 113 °C or less.

The Appellant argues that because Kainz (Table 1, Examples A, B and D) achieves average particle diameters  $\leq 1 \mu\text{m}$  without the teachings of Shiba, one of ordinary skill in the art would not have modified Kainz’s aqueous dispersion to include organic solvent as taught by Shiba (col. 3, ll. 29–34; col. 7, l. 66 – col. 8, l. 20) to obtain such a particle diameter (Appeal Br. 14–15).

Kainz discloses that the aqueous dispersion can contain organic solvent (pp. 23, 24), but does not disclose the amount of organic solvent. Although Kainz’s polyolefin homopolymer or copolymer (pp. 6–18) differs from Shiba’s polyolefin terpolymer (col. 2, l. 60 – col. 3, l. 29), Shiba’s disclosure that blending organic solvent in the aqueous medium optimally in the range of 3–30 wt% promotes water compatibilization of the polyolefin resin (col. 7, l. 66 – col. 8, l. 20) would have suggested, to one of ordinary skill in the art, using Kainz’s organic solvent in that amount to promote water compatibilization of Kainz’s polyolefin resin. *See In re O’Farrell*, 853 F.2d 894, 903–04 (Fed. Cir. 1988) (“Obviousness does not require absolute

predictability of success. . . . For obviousness under § 103, all that is required is a reasonable expectation of success.”). The 3–30 wt% range encompasses the Appellant’s recited 3–20 wt% range (claims 1 and 20).

The Appellant argues, in reliance upon the Appellant’s Examples 26 (POLYWAX 500) and 27 (POLYWAX 1000) and Comparative Example U (POLYWAX 3000), that only POLYWAX having a number average molecular weight of 1,000 or less provides a coefficient of friction low enough for the POLYWAX to be suitable as an abrasion reducing compound, and that this is a surprising and meaningful distinction (Appeal Br. 15–16).

That argument is not persuasive because the Appellant compares POLYWAX 1000 (number average molecular weight 1,000, melting point 113 °C), which is within the Appellant’s claims, to POLYWAX 3000 (number average molecular weight 3,000, melting point 129 °C), not to the closest prior art (POLYWAX 2000 (number average molecular weight 2,000, melting point 126 °C), for example, is closer than POLYWAX 3000 to POLYWAX 1000). *See In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991); *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984). Also, the Appellant does not provide evidence that the relied-upon results would have been unexpected by one of ordinary skill in the art. *See In re Freeman*, 474 F.2d 1318, 1324 (CCPA 1973); *In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972). The Appellant provides mere attorney argument, and such argument of counsel 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).

Rejection under 35 U.S.C. § 112, first paragraph

A specification complies with the 35 U.S.C. § 112, first paragraph, written description requirement if it conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, the inventor was in possession of the invention. *See Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991); *In re Kaslow*, 707 F.2d 1366, 1375 (Fed. Cir. 1983); *In re Edwards*, 568 F.2d 1349, 1351–52 (CCPA 1978); *In re Wertheim*, 541 F.2d 257, 262 (CCPA 1976).

The Examiner finds:

Though paragraph [049] of instant specification recites that “the aqueous dispersion can comprise wax, or a portion of the wax, can be a component of the aqueous dispersion”, that is, the aqueous dispersion can comprise the wax along with the melt blending product, instant specification does not provide a support for i) the wax being component of the melt blending product portion of said aqueous dispersion and for ii) the overall abrasion reducing composition which comprises wax, being part of the melt blending product, i.e. the overall abrasion reducing composition being melt blended as the component (d) along with the components (a) to (c). The abrasion resistant composition, as the component (d), may include components other than said wax, as well, and said abrasion resistant composition being part of the melt blending product is not supported by instant specification. [(Ans. 14)]

The Appellant argues: “[T]he present specification explicitly provides: ‘embodiments of the present disclosure provide coating compositions that comprise an aqueous dispersion including a melt blending product of (a) a base polymer comprising at least one polyolefin, (b) a stabilizing agent, and (c) a compatibilizer’ (paragraph [009])” (Appeal Br. 7).

That paragraph does not state that the melt blending product can contain polyethylene wax.

The Appellant argues:

Further, the present specification explicitly provides: “embodiments provide that the abrasion reducing composition comprises a wax” and “the wax may be utilized neat” and “a number of embodiments of the present disclosure provide that the aqueous dispersion can comprise the wax, e.g., the wax or a portion of the wax, can be a component of the aqueous dispersion” (paragraph [049], emphasis added). [(Appeal Br. 7–8)]

That paragraph states that the aqueous dispersion can contain wax, but does not state that the wax in the aqueous dispersion can be in the abrasion reducing composition.

The Appellant argues that “[t]he present specification provides that the aqueous dispersion, which the wax can be a component of, can be prepared by melt blending (See paragraph [044] for example)” (Appeal Br. 8).

That paragraph states that one or more base polymers, one or more stabilizing agents, and one or more compatibilizers can be melt-kneaded to form a melt blending product, but does not state that the wax can be part of the melt blending product.

## CONCLUSION

The Appellant has not indicated reversible error in the Examiner’s rejections under 35 U.S.C. § 103(a) or rejection under § 112, first paragraph. Accordingly, we affirm those rejections.

DECISION SUMMARY

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 8–18, 20	103(a)	Kainz, Shiba, Klier, POLYWAX	1, 8–18, 20	
1, 8–18, 20	103(a)	Kainz, Shiba, Klier, Nakamoto, Foster	1, 8–18, 20	
1, 8–18, 20	103(a)	Kainz, Shiba, Jensen Moller	1, 8–18, 20	
20	112, first paragraph	Written Description	20	
<b>Overall Outcome</b>			<b>1, 8–18, 20</b>	

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED