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3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			SHOSHO, CALLIE E	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MICHAEL A. JOHNSON, FRANK A. BRANDYS,
KENT E. NIELSEN, CHARLIE C. HO,
and VIJAY RAJAMANI

Appeal 2019-005743
Application 14/603,851
Technology Center 1700

Before MASHID D. SAADAT, DONNA M. PRAISS, and
BRIAN D. RANGE, *Administrative Patent Judges*.

RANGE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 7–26. We have jurisdiction under 35 U.S.C. § 6(b).

¹ 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 3M Company (formerly known as Minnesota Mining and Manufacturing Company).
Appeal Br. 2.

We AFFIRM.

CLAIMED SUBJECT MATTER²

Appellant describes the invention as relating to paint films or paint production films that could be used, for example, as an aesthetically pleasing coating for vehicles. Spec. 1–2. Claim 7 is illustrative, and we reproduce claim 7 below while adding emphasis to recitations at issue on appeal:

7. A multilayer article comprising:
 - a thermoformable substrate having a bottom surface and a top surface;
 - a base layer having a bottom surface and a top surface, the bottom surface of the base layer adhered to the top surface of the thermoformable substrate, and wherein the base layer comprises a first polymeric material; and
 - an optional transparent protective layer having a bottom surface and a top surface, the bottom surface of the transparent protective layer contacting and permanently adhered to the top surface of the base layer, and wherein the transparent protective layer comprises a second polymeric material,
 - wherein the polymeric material of at least one of the base layer and the transparent protective layer comprises a polyurethane, **with the polyurethane having hard segments in an amount in the range of from 35 to 65 percent by weight,**
 - wherein the polymeric material of at least one of the base layer and the transparent protective layer is substantially isotropic, and
 - wherein the bottom surface of the base layer is permanently adhered to the top surface of the thermoformable substrate either by an adhesive or by contacting and being

² In this Decision, we refer to the Final Office Action dated October 26, 2018 (“Final Act.”), the Appeal Brief filed April 26, 2019 (“Appeal Br.”), the Examiner’s Answer dated May 24, 2019 (“Ans.”), and the Reply Brief filed July 24, 2019 (“Reply Br.”).

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covalently bonded to the top surface of the thermoformable substrate.

Appeal Br. 10 (Claims App.) (emphasis added).

REJECTION AND REFERENCE

On appeal, the Examiner maintains the rejection of claims 7–26 under 35 U.S.C. § 103 as obvious over Johnson, US 5,122,560, issued June 16, 1992.

OPINION

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential), cited with approval in *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) (“[I]t has long been the Board’s practice to require an applicant to identify the alleged error in the examiner’s rejections.”). After considering the evidence presented in this Appeal and each of Appellant’s arguments, we are not persuaded that Appellant identifies reversible error. Thus, we affirm the Examiner’s rejections for the reasons expressed in the Final Office Action and the Answer. We add the following primarily for emphasis.

Appellant argues all claims as a group. *See* Appeal Br. 5–9. Therefore, consistent with the provisions of 37 C.F.R. § 41.37(c)(1)(iv) (2013), we limit our discussion to claim 7, and all other claims on appeal stand or fall together with claim 7.

The Examiner rejects claim 7 as obvious in view in Johnson. Ans. 3. The Examiner finds, for example, that Johnson teaches 1–5 wt% OH-

containing carboxylic acid and 5–35 wt% polyester urethane. Ans. 4 (citing Johnson). We note that Johnson actually teaches 5–30 wt% polyester urethane. Johnson 3:45–56; *see also* Reply Br. 2.³ The Examiner finds that Johnson thus teaches 10–40% hard segments (or at least 10–35 wt% hard segments if 30 wt% maximum polyester is used in the calculation) which overlaps the claimed range of 35–65 wt%. Ans. 3–4.

Appellant’s arguments focus on whether or not Johnson teaches or suggests claim 1’s recitation of “the polyurethane having hard segments in an amount in the range from 35 to 65 percent by weight.” Appeal Br. 5–9. As Appellant states, the Specification explicitly defines hard segment weight percent as follows:

As used herein: wt% means percent by weight based on the total weight of material, and

Hard Segment wt% = (weight of short chain diol and polyol + weight of short chain di- or polyisocyanate)/total weight of resin

wherein:

short chain diols and polyols have an equivalent weight \leq 185 g/eq, and a functionality \geq 2; and

short chain isocyanates have an equivalent weight \leq 320 g/eq and a functionality \geq 2.

Spec. 19:26–20:2.

Appellant argues that each example of Johnson has a lower percent of hard segments than claim 1’s recited 35 to 65 percent by weight. Appeal Br. 5–7. This argument is unpersuasive because the Examiner’s rejection relies upon Johnson’s broader teachings rather than Johnson’s specific examples.

³ This error is harmless because, as we explain, Appellant does not establish error in the Examiner’s overall finding that Johnson teaches “polyurethane having hard segments in an amount in the range of from 35 to 65 percent by weight.”

Ans. 5–6. *See Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1370 (Fed. Cir. 2007) (“all disclosures of the prior art, including unpreferred embodiments, must be considered”) (internal quotes and citation omitted).

Appellant also argues that the Examiner does not establish 35 percent hard segments because Johnson’s broader teachings do not distinguish between short chain and long chain diols/isocyanates. Appeal Br. 8. The Examiner, however, explains how Johnson teaches that both its 1–5% carboxylic acid and 5–30% polyisocyanate components are “short chain” within the Specification’s meaning of the term “short chain.” Ans. 6–7.

With respect to Johnson’s 1–5% “hydroxyl containing monocarboxylic acid,” the Examiner finds that the hydroxyl containing monocarboxylic acid has weight and functionality within the Specification’s definition of short chain. Ans. 6–7. Appellant argues that the OH-containing carboxylic acid is not a short chain because “a carboxylic acid group is generally not considered a polyol group.” Reply Br. 1–2. Although Appellant’s statement may be accurate with respect to carboxylic acid *groups* and polyol *groups*, Appellant does not address the issue at hand: is a hydroxyl containing monocarboxylic acid (i.e., the entire molecule not just a group within a molecule) a polyol? Because the acid is “hydroxyl containing,” the preponderance of the evidence supports finding that Johnson’s acid includes a –OH group and is thus a polyol. Appellant presents no persuasive argument or evidence to the contrary.

With respect to Johnson’s polyisocyanate, the Examiner finds that Johnson’s dihydroxy succinic acid is the same as Desmodur N 3390 as disclosed in Appellant’s Specification. Ans. 6–7; Spec. 18:25–19:11. The Examiner thus finds that Johnson’s polyisocyanate is short chain within the

Specification's definition. Ans. 6–7. Appellant does not persuasively dispute these particular findings. Appellant instead argues that Johnson only teaches trifunctional isocyanate (i.e., Desmodur N3390) in an amount from 0–15% by weight. Reply Br. 2. Appellant's argument is unpersuasive because Johnson's reference to "0–15% by weight of a trifunctional isocyanate" is merely a preferred embodiment. Johnson 3:51–56 ("Preferably ... 0–15% by weight of a trifunctional isocyanate are used"). Johnson more broadly teaches 5–30% of organic polyisocyanate (Johnson 3:45–51), and the Examiner appropriately relied upon this broader teaching. *See, e.g., Pfizer, Inc.*, 480 F.3d at 1370.

Based on the above, the Examiner established by a preponderance of the evidence that Johnson teaches up to 5% by weight of a short chain polyol (the hydroxyl containing monocarboxylic acid) and up to 30% by weight of short chain polyisocyanate. Johnson 3:45–56. The Examiner thus establishes that Johnson teaches up to 35% by weight hard segments based upon the Specification's definition. This percentage overlaps with claim 7's recitation of "35 to 65 percent by weight." The overlapping range is sufficient to establish prima facie obviousness. *See In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003) ("even a slight overlap in range establishes a prima facie case of obviousness."); *see also, e.g., In re Woodruff*, 919 F.2d 1575, 1577 (Fed. Cir. 1990) (affirming obviousness determination based upon prior art reference whose disclosed range ("about 1–5%" carbon monoxide) abutted claimed range ("more than 5% to about 25%" carbon monoxide)).

Appellant further argues that a higher percent of hard segments provide better scratch resistance. Appeal Br. 7. Appellant, however, does not argue unexpected results and does not present evidence sufficient to

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establish unexpected results. Ans. 6. Appellant's argument, therefore, does not persuasively weigh against the evidence of obviousness we address above.

Because Appellant's arguments do not identify Examiner error, we sustain the Examiner's rejection.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
7-26	103	Johnson	7-26	

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