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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/034,698	05/05/2016	Jean-Marc Boutillier	EANF-250US	4194
23122	7590	08/19/2020	EXAMINER	
RATNERPRESTIA 2200 Renaissance Blvd Suite 350 King of Prussia, PA 19406			FALKOWITZ, ANNA R	
			ART UNIT	PAPER NUMBER
			1617	
			NOTIFICATION DATE	DELIVERY MODE
			08/19/2020	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JEAN-MARC BOUTILLIER and SYLVAIN BOURRIGAUD

Appeal 2020-000348
Application 15/034,698
Technology Center 1600

Before ERIC B. GRIMES, FRANCISCO C. PRATS, and
LILAN REN, *Administrative Patent Judges*.

PRATS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1, 3–10, 13, 14, and 16–21. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

STATEMENT OF THE CASE

The sole rejection before us for review is the Examiner's rejection of claims 1, 3–10, 13, 14, and 16–21 under 35 U.S.C § 103 as being

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Arkema France as the real party in interest. Appeal Br. 1.

unpatentable over Galleguillos,² Trinh,³ Steinwall,⁴ and Polymerdatabase.⁵
Final Act. 2–10 (entered October 19, 2018).⁶

Appellant’s claim 1, the sole independent claim on appeal, and its dependent claims 4 and 5, reproduced below, illustrate the appealed subject matter:

1. A composition, comprising:
 - an elastomeric phase of macromolecular sequences having a flexible nature with a glass transition temperature of less than 20°C, wherein the elastomeric phase of macromolecular sequences is formed from blocks of a block copolymer which is amorphous; and
 - at least one active ingredient as odoriferous active compound which is an organic molecule having a molecular weight of at least 16g/mol and an odour threshold value in air of at least 0.5 ppb,
wherein the block copolymer has a water solubility of less than 0.5 g/l.
4. A composition according to claim 1, wherein said elastomeric phase of macromolecular sequences is formed from blocks of an acrylic block copolymer.
5. A composition according to claim 4, wherein said acrylic block copolymer has a general formula (A)_nB in which:
 - n is an integer of greater than or equal to 1,

² WO 00/40628 A1 (published July 13, 2000).

³ US 5,849,310 (issued Dec. 15, 1998).

⁴ <http://www.steinwall.com/wp-content/uploads/2016/05/Polymethylmethacrylate-PMMA.pdf> (citation provided by the Examiner).

⁵ <http://polymerdatabase.com/polymer%20physics/Polymer%20Density.html> (accessed Oct. 13, 2017).

⁶ The Final Action lists claim 2 among the rejected claims. Final Act. 2. Claim 2 has been canceled, however. *See* Appeal Br. 7.

- A is: an acrylic or methacrylic homo- or copolymer having a Tg of greater than 50°C, or polystyrene, or an acrylic/styrene or methacrylic/styrene copolymer;
- B is an acrylic or methacrylic homo- or copolymer having a Tg of less than 20°C.

Appeal Br. 7 (emphasis added to claimed feature at issue).

DISCUSSION

The Examiner cited Galleguillos as describing a block copolymer composition having all of the features of the rejected claims, except for an odoriferous compound having the properties recited in claim 1. Final Act. 4. The Examiner cited Trinh as evidence that it would have been obvious to include an odoriferous compound encompassed by claim 1 in Galleguillos's composition. *Id.* at 4–5. The Examiner cited Steinwall and Polymerdatabase as evidence that the block polymers disclosed in Galleguillos are inherently amorphous (i.e., not crystalline), as required by dependent claim 3. *See id.* at 5.

As to the disputed limitation, the requirement in Appellant's claim 1 for the block copolymer to have a water solubility of less than 0.5 g/l, the Examiner reasoned that because Galleguillos discloses that its compositions may contain block copolymers composed of acrylic and/or methacrylic monomers recited in Appellant's claims, in proportions recited in Appellant's claims, Galleguillos's compositions must necessarily have the claimed water solubility. *See* Final Act. 5–6 (“[I]f the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present.” (citing *In re Spada*, 911 F.2d 705, 709 (Fed. Cir. 1990))); *see also* Ans. 6 (“As Galleguillos discloses an AB type copolymer

that . . . can include the same monomers as instantly claimed, within the same weight ranges as instantly claimed, therefore a polymer with instantly claimed water solubility can be made from the disclosure of Galleguillos.”).

Appellant contends that, because Galleguillos repeatedly describes its block copolymer compositions as being water soluble, the Examiner failed to establish that Galleguillos’s compositions inherently meet claim 1’s requirement for the block copolymer to have a water solubility of less than 0.5 g/l, as required by Appellant’s claim 1. Appeal Br. 2–5.

We agree with Appellant.

“Inherency is established in the context of obviousness when the limitation at issue necessarily must be present, or [is] the natural result of the combination of elements explicitly disclosed by the prior art.” *Hospira, Inc. v. Fresenius Kabi USA, LLC*, 946 F.3d 1322, 1329 (Fed. Cir. 2020) (internal quotations omitted).

“Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In re Oelrich*, 666 F.2d 578, 581 (CCPA 1981).

Rather, the “very essence of inherency is that one of ordinary skill in the art would recognize that a reference *unavoidably* teaches the property in question.” *Agilent Technologies, Inc. v. Affymetrix, Inc.*, 567 F.3d 1366, 1383 (Fed. Cir. 2009) (emphasis added).

In the present case, we are not persuaded that the Examiner has shown that following the teachings in Galleguillos unavoidably results in a block polymer with the low solubility of less than 0.5 g/l required by Appellant’s claim 1. While it is undisputed on this record that Galleguillos describes

preparing block copolymers composed of monomers encompassed by Appellant's claims, Galleguillos nonetheless repeatedly discloses that its block copolymers, which are useful in hair styling compositions, are water soluble:

[T]he copolymers of this invention are designed to provide long lasting hair style retention at high humidity, natural feel, good hair combing, reduced flaking, no build up, and good hair styling and restyling. *They are . . . water and alcohol soluble or dispersible and washable with water and shampoo.*

Galleguillos 7 (emphasis added); *see also id.* at 17 (“The exact ratio of the monomers **A** and **B** is not critical to solubility. Copolymers with a high proportion of the hydrophobic **A-Block** can be dissolved in water by adjusting the pH.”); *id.* at 19–20 (“The copolymers can be dissolved in water, water-ethanol or water-solvent mixtures by dispersing the copolymer in the solvent and adjusting the pH with an organic or inorganic base between pH3 and pH12. . . . Within this pH range, water clear solutions of the copolymer can be prepared.”); *id.* at 30 (inclusion of allyl methacrylate chain extender in block copolymer rendered block copolymer soluble in water).

Because Galleguillos expressly discloses that its block copolymers are water soluble, the Examiner does not persuade us that claim 1's water solubility of less than 0.5 g/l is an unavoidable or natural result of following Galleguillos's teachings. The fact that it might be possible to prepare a block copolymer with a water solubility of less than 0.5 g/l by using the monomers disclosed in the reference (*see* Ans. 6) does not establish that Galleguillos inherently describes such a block copolymer. *See Oelrich*, 666 F.2d at 581 (“Inherency . . . may not be established by probabilities or possibilities.”).

Moreover, given Galleguillos's teachings, noted above, that water solubility is a desired property of its block copolymers, we are not persuaded that the Examiner has explained sufficiently why Galleguillos would have motivated a skilled artisan to prepare a block copolymer with a water solubility of less than 0.5 g/l, for use in the hair styling applications taught in the reference, much less combine such a block copolymer with one of Trinh's personal care fragrances, as posited in the rejection. *See In re Hedges*, 783 F.2d 1038, 1041 (Fed. Cir. 1986) (When evaluating obviousness, it is "impermissible . . . to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.").

In sum, for the reasons discussed, we are not persuaded that the Examiner has shown that following Galleguillos's teachings inherently results in a block copolymer with claim 1's water solubility of less than 0.5 g/l, nor are we persuaded that the Examiner has explained sufficiently why the cited references suggest combining a block copolymer having a water solubility of less than 0.5 g/l with a fragrance encompassed by claim 1. Accordingly, we reverse the Examiner's obviousness rejection of claim 1, and its dependent claims 3–10, 13, 14, and 16–21, over Galleguillos, Trinh, Steinwall, and Polymerdatabase.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3–10, 13, 14, 16–21	103	Galleguillos, Trinh, Steinwall, Polymerdatabase		1, 3–10, 13, 14, 16–21

REVERSED