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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KARTHIKEYAN MURUGESAU,
INDUMATHI RAMAKRISHUAN, ROBERT F. HAYES,
and KEITH J. WELLER

Appeal 2019-000155
Application 14/102,880
Technology Center 1700

Before JEFFREY T. SMITH, BRIAN D. RANGE, and
MERRELL C. CASHION, JR., *Administrative Patent Judges*.

SMITH, *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, 2, 4, 5, 9, 10, 12–14, 16, 17, and 22.
We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

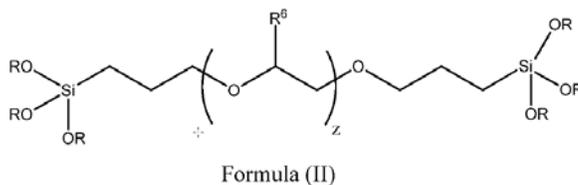
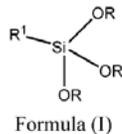
¹ We use the word “Appellant” to refer to “applicant” as defined in 37
C.F.R. § 1.42. Appellant identifies the real party in interest as Momentive
Performance Materials Inc. Appeal Br. 2.

The following rejection is presented for appeal:

Claims 1, 2, 4, 5, 9, 10, 12–14, 16, 17, and 22 are rejected under 35 U.S.C. § 103 as unpatentable over Patel (EP 0732356 A2; Sept. 18, 1996) in view of Karpov (US 2011/0245392 A1; Oct. 6, 2011) in view of Amano (JP 2012-025645 A; Feb. 9, 2012)².

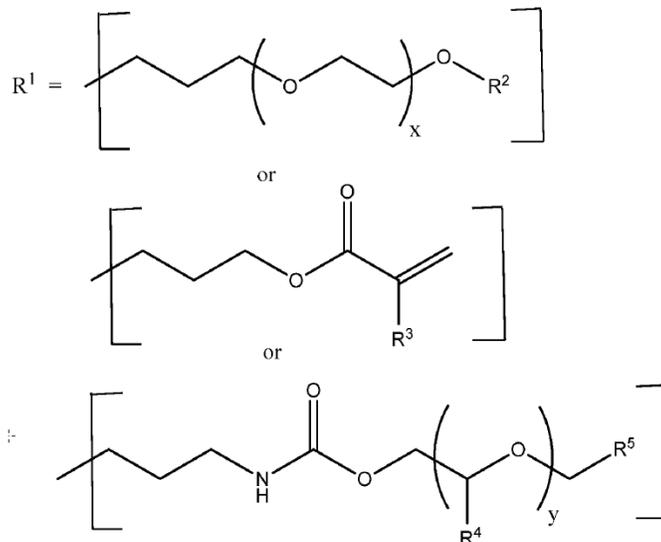
Appellant's invention relates to a primer composition comprising cerium oxide nanoparticles surface-modified with an organofunctional silane moiety. (Spec. ¶¶ 8–9). The primer coating compositions are useful to cast transparent, low haze, thin films that exhibit shelf stability of the primary coating formulation. (Spec. ¶ 6). Claim 1 is illustrative of the subject matter on appeal and is reproduced below:

1. A primer composition, comprising:
 - (a) cerium oxide nanoparticles surface-modified with an organofunctional silane moiety, said organofunctional silane moiety having the structure of Formula I or II:



wherein in Formula (I), R¹ is

² We refer to the machine translation that has been entered into the record.



or wherein R¹ is a functional group-containing moiety; wherein each R is an alkyl group having from 1 to 12 carbon atoms; wherein each R² and R⁵ is independently an alkyl group having from 1 to 4 carbon atoms or is -CO-CH₃; wherein each R³, R⁴ and R⁶ is independently hydrogen or methyl; and, wherein x, y and z are each an integer independently selected from 1 to 50,

(b) an organic polymer selected from the group consisting of: a polymethylmethacrylate, polyurethane, polycarbonate, urethane hexaacrylate, pentaerythritol triacrylate, polyvinylpyrrolidone, polyvinylbutyral, poly(ethylene terephthalate) and poly(butylene terephthalate); and

(c) one or more solvents,

wherein water is present an amount 2.25 wt% or less based on the total weight of said primer composition.

OPINION

Having considered the respective positions advanced by the Examiner and Appellant in light of this appeal record, we affirm the Examiner's rejection based on the fact-finding and reasoning set forth in the Answer, Advisory Action, and Final Office Action, which we adopt as our own. We add the following.

Appellant argues claims 1, 2, 4, 5, 9, 10, 12–14, 16, and 17 as a group and presents separate arguments for dependent claim 22. (App. Br. 4–18.) We select claim 1 as representative and claims 2, 4, 5, 9, 10, 12–14, 16, and 17 stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv)(2017). We address the arguments for dependent claim 22 separately.

Claims 1, 4, 5, 9, 10, 12–14, 16, and 17

Appellant's initial argument is that the exemplified primer composition of Patel, comprising surface-modified cerium oxide, does not have a water content that falls within the scope of the claimed invention. (App. Br. 8). Appellant further argues Patel teaches away from the claimed invention because Patel's exemplified embodiments teaches primer compositions must have greater than 20 weight percent water to avoid agglomerated or gel particles. (App. Br. 8).

Appellant's arguments lack persuasive merit. A reference is available for all that it teaches to a person of ordinary skill in the art. *In re Inland Steel Co.*, 265 F.3d 1354 (CA FC 2001); *Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) (“the fact that a specific [embodiment] is taught to be preferred is not controlling, since all disclosures of the prior art, including unpreferred embodiments, must be considered”) (quoting *In re Lamberti*, 545 F.2d 747, 750 (CCPA 1976)).

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Appellant has not disputed Patel's disclosure that water should be added when cerium oxide aquasol is added to an acrylic primer. Patel expressly states "[i]t is important to add at least 0.3% water be included in the acrylic primer when the acrylic primer is dissolved in an organic solvent." (Patel 5, ll. 32–33). Appellant's argument that Patel teaches away from the claimed invention is not persuasive because it fails to address Patel's entire disclosure. *See In re Fritch*, 972 F.2d 1260, 1264-65 (Fed. Cir. 1992) (A reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in this art would have reasonably been expected to draw therefrom.); *In re Bozek*, 416 F.2d 1385, 1390 (CCPA 1969) (A reference disclosure must be evaluated for all that it fairly teaches and not only for what is indicated as preferred). *See also, In re Gurley*, 27 F.3d 551, 553 (Fed.Cir.1994) ("A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.").

Appellant argues that the claimed primer composition exhibits unexpected results compared to formulations reported by or based on Patel. (Appeal Br. 11). Appellant argues Specification Example 1, representative of the claimed invention, exemplifies an embodiment that contains 0.3 weight percent water which exhibits both stability of the sol in addition to stability of the primer composition greater than 12 months. (Appeal Br. 10; *see* Example 1 (Tables 1 (Spec. ¶ 56) and 3 (Spec. ¶ 62))). Appellant argues disclosed Example C-2, a primer formulation comprising a ceria that is analogous to those described in Patel and containing 0.3 weight percent water, exhibits a sol that was unstable in less than 30 minutes and a primer

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composition that was unstable in less than 1 minute. (Appeal Br. 10; *see* Example C-2 (Table 3 (Spec. ¶ 62))).

Appellant’s evidence is insufficient to establish unexpected results over the closest prior art. Appellant has failed to explain adequately why the alleged analogous comparative compound is representative of Patel’s invention. *See In re Burckel*, 592 F.2d 1175, 1179 (CCPA 1979). Appellant has also failed to explain why the reproduced comparative examples are representative of the silane surface-modified cerium oxide described by Patel. Specifically, Appellant asserts that Example C-2 comprises a ceria that is analogous to those described in Patel but has failed to explain why the “analogous” exemplified ceria is representative of Patel.

Appellant argues Karpov is directed to ZnO nanoparticles—because only ZnO nanoparticles are exemplified— and therefore would not have motivated one of ordinary skill in the art to modify the teachings of Patel to arrive at a primer composition, “wherein water is present an amount of 2.25 wt% or less.” (App. Br. 13–14).

Appellant’s argument is not persuasive of reversible error because it does not address the reasons the Examiner cited Karpov. The Examiner cited Karpov for describing silane modified metal oxide nanoparticles dispersions that have UV absorbing properties that are representative of the elected species of organosilane compound. (Final Act. 6). Karpov specifically discloses the metal oxide particles may be cerium oxide. (Karpov ¶ 8).

Appellant further argues, “it is well known that CeO₂ nanoparticles and ZnO nanoparticles are chemically distinct and do not function or react in similar ways.” (App. Br. 14).

The recognized difference in reactivity between CeO₂ nanoparticles and ZnO nanoparticles does not detract from the express teachings of Karpov. Appellant has not disputed that Karpov discloses cerium oxide as suitable metal oxide particles. (Karpov ¶ 8). Based on the disclosures of Karpov, a person of ordinary skill in the art would have recognized the suitability of utilizing cerium oxide particles.

The Examiner cited Amano for teaching a silane surface treatment, similar to Karpov, wherein the silane treatment may have terminal hydroxyl or acetoxy groups. (Final Act. 7). A person of ordinary skill in the art would have reasonably expected, based on the teachings of Amano, that the silane surface treatment, such as described by Karpov, could have either a hydroxyl or acetoxy terminal groups. (Final Act. 7; Answer 17).

Claim 22

Appellant argues dependent claim 22 is not obvious over the combination of Patel and Karpov because Karpov does not teach a sol. (App. Br. 18).

Appellant’s argument is not persuasive of reversible error because it does not address the reasons the Examiner cited Karpov. (Final Act. 6). The Examiner cited Karpov for describing silane modified metal oxide nanoparticles dispersions that have UV absorbing properties that are representative of the elected species of organosilane compound. Moreover,

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Appellant has not disputed that Patel describes cerium oxide organosols and aquasols (Patel 5).

For the foregoing reasons and those the Examiner presents, we sustain the appealed rejection.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1, 2, 4, 5, 9, 10, 12–14, 16, 17, and 22	103	Patel, Karpov and Amano	1, 2, 4, 5, 9, 10, 12–14, 16, 17, and 22	

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

AFFIRMED