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Paper 9
Entered: May 9, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MIDWEST INDUSTRIAL SUPPLY, INC.,
Petitioner,

v.

SOILWORKS, LLC,
Patent Owner.

Case PGR2016-00004
Patent 8,968,592 B1

Before CHRISTOPHER L. CRUMBLEY, KRISTINA M. KALAN, and CHRISTOPHER M. KAISER, *Administrative Patent Judges.*

KAISER, *Administrative Patent Judge*.

DECISION
Denying Institution of Post-Grant Review
37 C.F.R. § 42.208

INTRODUCTION

A. Background

Midwest Industrial Supply, Inc. ("Petitioner") filed a Corrected Petition (Paper 5, "Pet.") requesting a post-grant review of claims 1–26 of U.S. Patent No. 8,968,592 B1 (Ex. 1003, "the '592 patent"). Soilworks, LLC ("Patent Owner") filed a Preliminary Response. Paper 8 ("Prelim. Resp.").

We have authority to determine whether to institute a post-grant review. 35 U.S.C. § 324(c); 37 C.F.R. § 42.4(a). The standard for instituting a post-grant review is set forth in 35 U.S.C. § 324(a), which provides that a post-grant review may not be instituted "unless the Director determines . . . it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable."

After considering the Petition and the Preliminary Response, we determine that Petitioner has not demonstrated that it is more likely than not that at least one of the claims it challenges is unpatentable. Accordingly, we do not institute post-grant review.

B. Related Matters

Neither party has identified any related matters involving the '592 patent. Pet. 1; Paper 6.

C. The Asserted Grounds of Unpatentability

Petitioner contends that claims 1–26 of the '592 patent are unpatentable based on the following grounds (Pet. 10–73):[1]

[1] Petitioner also relies on a Declaration from John C. Fetzer, Ph.D. Ex. 1002 ("the Fetzer Declaration" or "Fetzer Decl.").

Statutory Ground[2]	Basis	Challenged Claims
§ 102	Hawkins '266,[3] Hawkins '270,[4] EK35,[5] and EnviroKleen[6]	1–26
§ 103	Hawkins '266, Hawkins '270, EK35, and EnviroKleen	1–26
§ 103	Hawkins '266, Hawkins '270, EK35, EnviroKleen, and Lange[7]	7, 14, and 22
§ 103	Hawkins '266, Hawkins '270, EK35, EnviroKleen, and Rosenbaum[8]	7, 14, and 22
§ 112	n/a	1–26

D. The '592 Patent

The '592 patent relates to "dust suppressant compositions capable of suppressing dust and other suspendable particulates." Ex. 1003, 1:7–9.

[2] The America Invents Act ("AIA"), Pub. L. No. 112-29, took effect on March 18, 2013. Because the application from which the '592 patent issued was filed after that date, our citations to Title 35 are to its post-AIA version.

[3] Hawkins et al., U.S. Patent No. 7,074,266 B2, issued July 11, 2006 (Ex. 1005, "Hawkins '266").

[4] Hawkins et al., U.S. Patent No. 7,081,270 B2, issued July 25, 2006 (Ex. 1006, "Hawkins '270").

[5] Midwest Industrial Supply, Inc., *EK35 Synthetic Organic Dust Control Material Safety Data Sheet* (revised Aug. 14, 2006) (Ex. 1008, "EK35").

[6] Midwest Industrial Supply, Inc., *EnviroKleen Synthetic Organic Dust Control Material Safety Data Sheet* (revised Aug. 14, 2006) (Ex. 1009, "EnviroKleen").

[7] Lange et al., U.S. Patent No. 8,232,439 B2, issued July 31, 2012 (Ex. 1007, "Lange").

[8] Rosenbaum et al., U.S. Patent No. 7,981,270 B2, issued July 19, 2011 (Ex. 1004, "Rosenbaum").

These dust suppressant compositions are described as containing "a synthetic fluid." *Id.* at 2:22–23. In addition, the compositions "can comprise one or more binders," which "can have multiple functions," including "help[ing] the dust suppressant composition adhere to the desired surface and . . . caus[ing] particulates of certain surfaces to agglomerate." *Id.* at 6:49–55. The '592 patent states that, "[i]n certain embodiments, the synthetic fluid can comprise a commercially-available synthetic fluid, such as the Shell Risella X series . . . including, for example, Shell Risella X 415, Shell Risella X 420, or Shell Risella X 430." *Id.* at 4:15–21.

E. Illustrative Claim

Of the challenged claims in the '592 patent, claims 1, 10, and 18 are independent, and claim 1 is illustrative. It recites:

> 1. A dust suppressant composition comprising:
>
> (a) a synthetic fluid comprising at least one acyclic aliphatic compound and at least one cyclic aliphatic compound, wherein the at least one acyclic aliphatic compound comprises one or more methyl-branched alkanes, one or more dimethyl-branched alkanes, and one or more trimethyl-branched alkanes, wherein the synthetic fluid comprises:
>
> 5 to 75 weight percent of the one or more methyl-branched alkanes,
>
> 5 to 70 weight percent of the one or more dimethyl-branched alkanes, and
>
> 5 to 60 weight percent of the one or more trimethyl-branched alkanes; and
>
> (b) at least one binder and
>
> wherein at least 65 weight percent of the at least one acyclic compound has a carbon chain length in the range of C24 to C36, wherein at least 65 weight percent of the at least one

> cyclic aliphatic compound has a carbon chain length in the range of C24 to C36.

Ex. 1003, 11:38–57 (some paragraphing added for clarity).

ANALYSIS

A. Claim Construction

In a post-grant review, we construe claim terms in an unexpired patent according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.200(b); *see In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1275–79 (Fed. Cir. 2015), *cert. granted sub nom. Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 890 (mem.) (2016).[9] Claim terms also are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

1. Terms Defined in the Specification

Petitioner notes that five terms are defined in the Specification of the '592 patent: "synthetic," "aliphatic," "alkane," "alicyclic," and "gas-to-liquid process." Pet. 4–5. Patent Owner does not disagree with Petitioner's argument that these terms should have the meanings given to them in the Specification. We agree with Petitioner that these terms are defined clearly in the Specification. Accordingly, we give them the following constructions.

With respect to a fluid, the Specification states that "synthetic" means "that the relevant fluid has undergone at least some chemical transformation

[9] We note that Petitioner does not propose any different claim-construction standard, and Patent Owner does not propose any claim-construction standard at all. Pet. 4; Prelim. Resp.

during its production," as opposed to "materials that have only been subjected to a simple purification or separation process that does not alter the chemical composition of the material." Ex. 1003, 2:26–31. Thus, we construe "synthetic" to mean "that the relevant fluid has undergone at least some chemical transformation during its production." *Id.*

With respect to a chemical compound, the Specification states that "aliphatic" means "a compound that is composed of carbon and hydrogen." *Id.* at 3:14–16. Thus, we construe "aliphatic" to mean "a compound that is composed entirely of carbon and hydrogen."

With respect to a chemical compound, "alkane" means "an aliphatic compound that only contains single bonds." *Id.* at 3:25–27.

With respect to a chemical compound, "alicyclic" means "a compound that comprises a cycloalkane component and a linear or branched alkane component." *Id.* at 3:29–31.

With respect to producing synthetic fluids, a "gas-to-liquid process" is defined as "a process for converting natural gas into synthetic fluids" that involves

> (1) carrying a natural gas to a processing facility; (2) separating water and other byproducts from the natural gas; (3) introducing the pure natural gas into a gasification reactor, wherein the natural gas is mixed with oxygen and is converted into synthesis gas; (4) introducing the synthesis gas into a reactor wherein a catalyst converts the gas into long-chain waxy hydrocarbons and water; (5) cracking the long-chain hydrocarbons in a cracker with hydrogen in order to produce shorter hydrocarbons; and (6) distilling the cracked hydrocarbon products into various liquids products having different boiling points.

Id. at 2:36–52.

2. "Methyl-Branched Alkane," "Dimethyl-Branched Alkane," and "Trimethyl-Branched Alkane"

Petitioner proposes that "methyl-branched alkane" be construed as "an alkane with a methyl substituent," that a "dimethyl-branched alkane" be construed as "an alkane with two methyl substituents," and that "trimethyl-branched alkane" be construed as "an alkane with three methyl substituents." Pet. 6. Patent Owner does not oppose these constructions, but, given that the precise construction of these terms does not appear to be important to the resolution of issues presented in the present Decision, we conclude that "methyl-branched alkane," "dimethyl-branched alkane," and "trimethyl-branched alkane" need not be construed expressly at this time.

3. "Binder"

Petitioner suggests that the term "binder" should be construed. Pet. 5–6. Petitioner does not, however, offer a proposed construction for this term. *Id.* Given this, and given that the precise construction of "binder" does not appear to be important to the resolution of issues presented in the present Decision, we conclude that "binder" need not be construed expressly at this time.

B. Asserted Anticipation by Hawkins '266, Hawkins '270, EK35, and EnviroKleen

Petitioner argues that claims 1–26 are anticipated by Hawkins '266, Hawkins '270, EK35, and EnviroKleen. Pet. 10–38. It is unclear whether Petitioner's position is (1) that each of the four listed references individually anticipates the claims, or (2) that the combination of the four listed references somehow anticipates the claims. For purposes of this Decision, and after reviewing the arguments and evidence before us, we understand Petitioner's position to be that each of the four listed references individually

anticipates the claims. Petitioner has not discussed or explained how the combination of the four listed references may be used in its anticipation argument. Specifically, Petitioner has not identified any of the references as a primary reference and has not argued that the extra references are cited to prove the enablement of the disclosure in the primary reference, to explain the meaning of a term used in the primary reference, or to show that a characteristic not disclosed in the primary reference is inherent. *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1269 (Fed. Cir. 1991) (typical rule is that anticipation "requires that every element of the claims appear in a single reference," but extra reference may be used to show inherency of primary reference's disclosure); *In re Baxter Travenol Labs.*, 952 F.2d 388, 390 (Fed. Cir. 1991) (extra reference may be used to show meaning of term used in primary reference); *In re Donohue*, 766 F.2d 531, 534 (Fed. Cir. 1985) (extra reference may be used to prove enablement of disclosure of primary reference).

1. Hawkins '266 and Hawkins '270

Hawkins '266 and Hawkins '270 are patents with nearly identical specifications. Although we discuss Hawkins '266 here, the same disclosures appear in Hawkins '270. Hawkins '266 discloses "a method of soil stabilization and dust control utilizing aliphatic and cyclic organic compounds, specifically blends of resin acids, fatty acids and their esters with solvents that act as plasticizers and carriers." Ex. 1005, 1:16–19. Hawkins '266 discloses using a Petro-Canada product called DSF-65 as a portion of the disclosed solvent. *Id.* at 4:49–5:24. It also discloses a solvent containing aliphatic compounds, *id.* at 3:42–48, branched alkanes, *id.* at

10:17–19, or cyclic or alicyclic compounds, *id.* at 3:49–54, as well as a polyisobutylene binder, *id.* at 6:35–67.

2. EK35

EK35 is a Material Safety Data Sheet for a product (also called EK35) sold by Petitioner. Ex. 1008, 1. The data sheet indicates that 30 to 70 percent of the product is carboxylic acids, with the remainder being a "[s]everely hydrotreated, high viscosity synthetic iso-alkane." *Id.* It also discloses that the product is a dust retardant and stabilization agent. *Id.*

3. EnviroKleen

EnviroKleen is a Material Safety Data Sheet for a product (also called EnviroKleen) sold by Petitioner. Ex. 1009, 1. The data sheet indicates that 5 to 25 percent of the product is polyolefin, with the remainder being a "[s]everely hydrotreated, high viscosity synthetic iso-alkane." *Id.* It also discloses that the product is a dust retardant and stabilization agent. *Id.*

4. Analysis of Anticipation by Hawkins '266, Hawkins '270, EK35, and EnviroKleen

Petitioner argues that each of Hawkins '266, Hawkins '270, EK35, and EnviroKleen discloses all the limitations of each of claims 1–26 of the '592 patent. Pet. 10–38. Among other disagreements with Petitioner's argument, Patent Owner argues that none of Hawkins '266, Hawkins '270, EK35, and EnviroKleen discloses either of two limitations that appear in every independent claim: "at least 65 weight percent of the at least one acyclic compound has a carbon chain length in the range of C24 to C36" and "at least 65 weight percent of the at least one cyclic aliphatic compound has a carbon chain length in the range of C24 to C36." Prelim. Resp. 21.

We agree with Patent Owner. Petitioner has not directed us to evidence of record sufficient to establish that any of Hawkins '266, Hawkins '270, EK35, and EnviroKleen discloses the limitations requiring the acyclic and cyclic compounds in the synthetic fluid to be at least 65 weight percent compounds with carbon chain lengths in the range of C24 to C36. Petitioner's argument with respect to these limitations is that Hawkins '266 and Hawkins '270 disclose the use of DSF-65, that the '592 patent describes the use of Risella X 420, and that, according to Dr. Fetzer, DSF-65, Risella X 420, EK35, and EnviroKleen all have similar compositions. Pet. 14, 28–29; Ex. 1002 ¶¶ 33–34. But the '592 patent does not mandate the use of Risella X 420 in its claimed invention; instead, this product is only one of several commercial products that can be included "[i]n certain embodiments" of the disclosed invention. Ex. 1003, 4:15–21. It does not necessarily follow that Risella X 420, or a similar composition, falls within the scope of any of the claims of the '592 patent.

Normally, we do not interpret claim terms in a way that excludes embodiments disclosed in the specification. *Oatey Co. v. IPS Corp.*, 514 F.3d 1271, 1276 (Fed. Cir. 2008). That general rule, however, has exceptions; for example, "during prosecution, an applicant may have cancelled pending claims but not amended the specification to delete disclosure relevant only to the cancelled claims." *PSN Illinois, LLC v. Ivoclar Vivadent, Inc.*, 525 F.3d 1159, 1166 (Fed. Cir. 2008); *see also TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1373 (Fed. Cir. 2008) ("[R]ead in the context of the specification, the claims of the patent need not encompass all disclosed embodiments. . . . Our precedent is replete with examples of subject matter that is included in the specification,

but is not claimed."); *Gen. Atomics Diazyme Labs. Div. v. Axis-Shield ASA*, 277 F. App'x 1001, 1008 (Fed. Cir. 2008) (non-precedential) ("A claim need not cover all embodiments in a patent specification. . . . Prosecution strategies may evolve so that some embodiments are covered in a patent and others are not.").

Even assuming that the claims that were originally filed in the application that issued as the '592 patent were intended to cover all embodiments in the Specification, we note that claim 1 began as a much broader claim:

> 1. A dust suppressant composition comprising:
>
> (a) a synthetic fluid comprising at least one acyclic aliphatic compound and at least one cyclic aliphatic compound; and
>
> (b) at least one binder.

Patent Application Serial No. 14/250,230, submitted Apr. 10, 2014. From this initial version, claim 1 was narrowed to include limitations that may or may not encompass all embodiments disclosed in the Specification. For instance, the limitation "wherein at least 65 weight percent of the at least one acyclic compound has a carbon chain length in the range of C24 to C36, wherein at least 65 weight percent of the at least one cyclic aliphatic compound has a carbon chain length in the range of C24 to C36" was added, but Petitioner has presented insufficient evidence that the Risella X 420 has such characteristics. In light of the evolution of claim 1, Petitioner has not demonstrated persuasively that Risella X 420 meets the two disputed limitations of the claim discussed herein. *Gen. Atomics*, 277 F. App'x at 1008. Accordingly, demonstrating that the DSF-65, EK35, and EnviroKleen products have compositions similar to that of Risella X 420 does not demonstrate that those products have the compositions of the fluids claimed

in the ’592 patent.[10] Without evidence that Hawkins ’266, Hawkins ’270, EK35, and EnviroKleen disclose compositions within the ranges claimed in the ’592 patent, none of those references can be found to anticipate any of the claims of the ’592 patent.

Thus, we are not persuaded that Petitioner has demonstrated that any of the challenged claims is more likely than not to be unpatentable on the ground of anticipation by Hawkins ’266, Hawkins ’270, EK35, and EnviroKleen.

C. Asserted Obviousness over Hawkins ’266, Hawkins ’270, EK35, and EnviroKleen

Petitioner argues that claims 1–26 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Hawkins ’266, Hawkins ’270, EK35, and EnviroKleen. Pet. 42–69. Relying on the testimony of Dr. Fetzer, Petitioner explains how these references teach each of the limitations of these claims. *Id.* Neither Petitioner nor Dr. Fetzer explains why a person of ordinary skill in the art would have combined these references. *Id.*; Ex. 1002 ¶¶ 35–36. Moreover, Petitioner’s obviousness arguments are identical to Petitioner’s anticipation arguments. Pet. 10–38, 42–69. The only exception is that the Fetzer Declaration includes the following language with

[10] Even if we were to assume that compositional similarity to Risella X 420 was indicative of whether a compound fell within the scope of the claims, as Petitioner argues, it is not clear on the present record that the evidence of record is more likely than not to support a finding that the DSF-65, EK35, and EnviroKleen products have compositions similar to that of Risella X 420. Although Petitioner argues that they do, *e.g.*, Pet. 14, and Dr. Fetzer testifies that they do, Ex. 1002 ¶ 33, neither Petitioner nor Dr. Fetzer explains how to interpret the data presented at pages 32–202 of Dr. Fetzer’s Declaration in order to reach this conclusion.

respect to obviousness: "even if the claims are found not to be anticipated, all the claims would be obvious in view of [Hawkins '266, Hawkins '270, EK35, and EnviroKleen]." Ex. 1002 ¶ 36. This conclusory statement is not sufficient to satisfy Petitioner's burden under 37 C.F.R. § 42.204(b).

As discussed above, at most, Petitioner has demonstrated that the DSF-65 product disclosed in Hawkins '266 and Hawkins '270 and the EK35 and EnviroKleen products all have compositions similar to the Risella X 420 described in the Specification of the '592 patent, without demonstrating that those products have the compositions of the fluids claimed in the '592 patent. Based on the evidence before us, we cannot conclude that it is more likely than not that Petitioner will be able to demonstrate that Hawkins '266, Hawkins '270, EK35, and EnviroKleen render obvious claims 1–26.

D. Asserted Obviousness over Hawkins '266, Hawkins '270, EK35, EnviroKleen, and Lange

Petitioner asserts that claims 7, 14, and 22 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Hawkins '266, Hawkins '270, EK35, EnviroKleen, and Lange. Pet. 38–39. Relying on the obviousness analysis discussed above for most of the claim limitations, Petitioner argues that the limitation "wherein the synthetic fluid is derived from a Gas-to-Liquids ('GTL') process," which appears in each of these claims, is taught or suggested by Lange. *Id.* Petitioner does not explain why a person of ordinary skill in the art would have combined Lange with Hawkins '266, Hawkins '270, EK35, and EnviroKleen, nor does Petitioner demonstrate that Lange remedies any of the deficiencies of these references discussed above. *Id.* Accordingly, we cannot conclude that it is more likely than not that Petitioner will be able to demonstrate that Hawkins '266,

Hawkins ’270, EK35, EnviroKleen, and Lange render obvious claims 7, 14, and 22.

E. Asserted Obviousness over Hawkins ’266, Hawkins ’270, EK35, EnviroKleen, and Rosenbaum

Petitioner asserts that claims 7, 14, and 22 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Hawkins ’266, Hawkins ’270, EK35, EnviroKleen, and Rosenbaum. Pet. 39–41. Relying on the obviousness analysis discussed above for most of the claim limitations, Petitioner argues that the limitation “wherein the synthetic fluid is derived from a Gas-to-Liquids (‘GTL’) process,” which appears in each of these claims, is taught or suggested by Rosenbaum. *Id.* Petitioner does not explain why a person of ordinary skill in the art would have combined Rosenbaum with Hawkins ’266, Hawkins ’270, EK35, and EnviroKleen, nor does Petitioner demonstrate that Rosenbaum remedies any of the deficiencies of these references discussed above. *Id.* Accordingly, we cannot conclude that it is more likely than not that Petitioner will be able to demonstrate that Hawkins ’266, Hawkins ’270, EK35, EnviroKleen, and Rosenbaum render obvious claims 7, 14, and 22.

F. Asserted Lack of Enablement of Claims 1–26

Petitioner argues that the written description of the ’592 patent is insufficient to enable a person of ordinary skill in the art to make and use the invention claimed in claims 1–26 without undue experimentation. Pet. 69–73. Specifically, Petitioner argues that the working examples of the ’592 patent describe the use of only a single commercial product as the synthetic fluid of the claims, rather than teaching how to make the wide range of synthetic fluids that is defined by the composition limitations of the

challenged claims. *Id.* at 70. Further, Petitioner argues that "determin[ing] if a chemical compound has methyl, dimethyl, and trimethyl-branched alkanes requires an undue amount of experimentation." *Id.* at 72. Finally, Petitioner argues that only "a small fraction of the range of species making up the claims of the '592 Patent" are available from a particular supplier, Chevron, and then only in "gram quantities" insufficient for making a "commercial dust suppressant," making it impossible for a person of ordinary skill in the art to make "the full range of the mixtures claimed in the '592 Patent" without "a great deal of experimentation." *Id.* at 72–73. None of Petitioner's arguments persuades us that it is more likely than not that any of the challenged claims are not enabled.

The challenged claims are not enabled unless the Specification of the '592 patent "contain[s] a written description of the . . . manner and process of making and using [the invention sufficient] . . . to make and use the [invention]." 35 U.S.C. § 112(a). "[T]o be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.'" *Genentech, Inc. v. Novo Nordisk, A/S*, 108 F.3d 1361, 1365 (Fed. Cir. 1997) (quoting *In re Wright*, 999 F.2d 1557, 1561 (Fed. Cir. 1993)). "[A] patent specification complies with the statute even if a 'reasonable' amount of routine experimentation is required in order to practice a claimed invention." *Enzo Biochem, Inc. v. Calgene, Inc.*, 188 F.3d 1362, 1371 (Fed. Cir. 1999).

Petitioner offers several arguments with respect to the enablement of the challenged claims. The first two arguments concern making the compositions of the challenged claims from non-pure-component mixtures such as Risella X 420. Petitioner's first argument is that the working

examples of the ’592 patent enable only claims to “Risella X 420 combined with either polyisobutylene or tall pitch oil,” because these are the only combinations described in the working examples. Pet. 70–71. Although Petitioner is correct that the working examples of the ’592 patent all use Risella X 420 (a commercial product) as a synthetic fluid, the content of the working examples is only one of many factors to consider in determining whether the claims are enabled:

> Factors to be considered in determining whether a disclosure would require undue experimentation . . . include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

In re Wands, 858 F.2d 731, 737 (Fed. Cir. 1988). Further, “[t]he enablement requirement is met if the description enables any mode of making and using the invention.” *Johns Hopkins Univ. v. Cellpro, Inc.*, 152 F.3d 1342, 1361 (Fed. Cir. 1998). Accordingly, that the working examples do not themselves enable the entire claimed range of synthetic fluids does not show that the claims are not enabled.

Petitioner’s second argument is that, although a person of ordinary skill in the art might be able to mix known mixtures of hydrocarbons together to form compositions throughout the claimed range, the person of ordinary skill in the art would not have known that they had done so without undue experimentation, because “determin[ing] if a chemical compound has methyl, dimethyl, and trimethyl-branched alkanes requires an undue amount of experimentation.” Pet. 72. As noted above, enablement requires a written description sufficient to teach a person of ordinary skill in the art to

make and use the claimed invention. 35 U.S.C. § 112(a). We are not aware of any authority, nor has Petitioner directed us to any, imposing an additional requirement that the written description teach the person of ordinary skill in the art how to determine whether the invention has been made. Further, to the extent there is such a requirement, the Petition directs us to no evidence to support Petitioner's contention that a person of ordinary skill in the art would have been unable, without undue experimentation, to determine whether a particular mixture "has methyl, dimethyl, and trimethyl-branched alkanes." Pet. 72. Accordingly, Petitioner has not directed us to evidence sufficient to establish that it is more likely than not that "determin[ing] if a chemical compound has methyl, dimethyl, and trimethyl-branched alkanes" actually "requires an undue amount of experimentation." *Id.*

Petitioner's final argument—that the individual pure compounds that could be combined to make the invention claimed in the '592 patent are unavailable in quantities sufficient "to be used as a commercial dust suppressant," Pet. 72—is likewise unpersuasive. First, the arguments discussed above have not persuaded us that it is more likely than not that the challenged claims are non-enabled for making the claimed mixtures from non-pure starting components, so enablement for making the claimed mixtures from pure components is not necessary.

Second, even if such enablement were required, Petitioner's argument is based on Dr. Fetzer's testimony that, "[o]ver the course of decades at Chevron, we were able to generate a library of hydrocarbons" in which the hydrocarbons were available "in many cases in only gram quantities." Ex. 1002 ¶ 41. Enablement of a chemical mixture does not require the

commercial-quantity availability of the individual components of the mixture, because "[e]nablement does not require an inventor to meet lofty standards for success in the commercial marketplace. Title 35 does not require that a patent disclosure enable one of ordinary skill in the art to make and use a perfected, commercially viable embodiment absent a claim limitation to that effect." *CFMT, Inc. v. Yieldup Int'l Corp.*, 349 F.3d 1333, 1338 (Fed. Cir. 2003). All that is required is a written description that teaches a person of ordinary skill in the art how to make and use the claimed product without undue experimentation. Petitioner does not explain why a person of ordinary skill in the art would require undue experimentation to determine how to mix together the small quantities of pure compounds available from Chevron, and there is no evidence of record that the invention claimed in the '592 patent requires anything more than mixing together certain pure compounds.

Third, Petitioner has not explained the importance of the testimony that Chevron "was able to generate . . . only a small fraction of the range of species making up the claims of the '592 Patent." Ex. 1002 ¶ 41. This testimony does not provide any information about which particular species within the claimed range were generated and which were not. As a result, it remains unclear whether the generated species are gathered together in a small portion of the claimed range or whether they are scattered throughout the claimed range. If the latter is the case, it is not at all clear that a person of ordinary skill in the art would be unable, in light of the knowledge of those generated species and the written description of the '592 patent, to envision species throughout the '592 patent's claimed range. Accordingly, Petitioner has not shown that it is more likely than not that the claims of the

’592 patent are not enabled. Because the burden is on Petitioner to show that it is more likely than not that the challenged claims are unpatentable, we conclude that Petitioner has not borne its burden with respect to its enablement challenge.

CONCLUSION

Upon consideration of the Petition, the Preliminary Response, and the evidence before us, we determine that Petitioner has not demonstrated that it is more likely than not that any of the claims it challenges are unpatentable as anticipated by any of Hawkins ’266, Hawkins ’270, EK35, or EnviroKleen; as obvious over the combination of Hawkins ’266, Hawkins ’270, EK35, and EnviroKleen; as obvious over the combination of Hawkins ’266, Hawkins ’270, EK35, EnviroKleen, and Lange; as obvious over the combination of Hawkins ’266, Hawkins ’270, EK35, EnviroKleen, and Rosenbaum; or as lacking enablement. Accordingly, we do not institute post-grant review of any claims on any ground.

ORDER

It is hereby

ORDERED that the Petition is *denied* as to all challenged claims, and no trial is instituted.

PETITIONER:

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