

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NESTLÉ PURINA PETCARE COMPANY,
Petitioner,

v.

OIL-DRI CORPORATION OF AMERICA,
Patent Owner.

Case IPR2015-00737
Patent 5,975,019

Before CARL M. DEFRANCO JR., JO-ANNE M. KOKOSKI, and
KRISTINA M. KALAN, *Administrative Patent Judges*.

KALAN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Petitioner Nestlé Purina PetCare Company filed a Petition (Paper 1, “Pet.”) to institute an *inter partes* review of claims 1–13, 30, and 32 of U.S. Patent No. 5,975,019 (Ex. 1001, “the ’019 patent”) pursuant to 35 U.S.C. §§ 311–319. Patent Owner Oil-Dri Corporation of America filed a Preliminary Response. Paper 9. On July 9, 2015, we instituted an *inter partes* review of claims 1–13, 30, and 32 on certain grounds of unpatentability alleged in the Petition. Paper 12 (“Dec.”). After institution of trial, Patent Owner filed a Patent Owner Response (Paper 17, “PO Resp.”) and Petitioner filed a Reply (Paper 19, “Reply”). Pursuant to authorization from the Board, Patent Owner filed a Sur-Reply (Paper 22, “Sur-Reply”).

Patent Owner filed a Motion to Exclude. Paper 25. Petitioner opposed Patent Owner’s Motion to Exclude (Paper 30), and Patent Owner filed a Reply (Paper 32). Patent Owner also filed a Motion for Observation (Paper 24) on certain cross-examination testimony of Petitioner’s declarant, Mr. Phillip Greene, and Petitioner filed a Response (Paper 31).

An oral hearing was held on March 1, 2016. A transcript of the hearing has been entered into the record. Paper 36 (“Tr.”).

The Board has jurisdiction under 35 U.S.C. § 6(c). In this Final Written Decision, issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73, we determine that Petitioner has not shown by a preponderance of the evidence that the claims for which trial was instituted, namely, claims 1–13, 30, and 32, are unpatentable.

A. *Related Matters*

The parties indicate that the '019 patent is the subject of the following district court proceeding: *Oil-Dri Corp. of America v. Nestle Purina PetCare Co.*, Case No. 1:15-cv-01067 (N.D. Ill.). Pet. 1; Paper 7, 1.

B. *The '019 Patent*

The '019 patent, titled “Clumping Animal Litter,” issued on November 2, 1999. The '019 patent is directed to a clump-forming, clay-based composition suitable for use as animal litter. Ex. 1001, 1:4–6. The '019 patent describes a “clumping animal litter utilizing the interparticle interaction of a swelling clay, such as sodium bentonite, in combination with a non-swelling clay material.” *Id.* at Abstract. The non-swelling clay material can be “any of the commonly known clays;” more specifically, an “absorbent clay material which is particularly useful in practicing the present invention is a non-swelling smectite” that contains calcium and/or magnesium in the form of exchangeable cations. *Id.* at 3:37–38, 3:51, 4:3–4. The patent discloses a composition of sixty percent (60%) by weight, or less, of sodium bentonite “after the judicious selection of particle size distribution such that the mean particle size of the non-swelling clay material is greater than the mean particle size of the sodium bentonite.” *Id.* at Abstract.

C. *Challenged Claims*

Of the challenged claims, claims 1 and 30 are independent. Claims 2–13 depend, directly or indirectly, from claim 1. Claim 32 depends from claim 30.

Claims 1 and 30 of the '019 patent are reproduced below:

1. A clumping animal litter comprising:

- a. a particulate non-swelling clay material having a predetermined mean particle size no greater than about 4 millimeters; and
- b. a particulate swelling clay having a predetermined mean particle size no greater than about 2 millimeters, wherein the mean particle size of the non-swelling clay material is greater than the mean particle size of the swelling clay.

30. A method for making a clumping animal litter comprising the steps of:

- a. combining a particulate non-swelling clay material with a suitable particulate swelling clay to form a composition wherein the mean particle size of the particulate non-swelling clay material is greater than the mean particle size of the particulate swelling clay;
- b. mixing the composition to effect a substantially uniform distribution of the two materials;
- c. packaging a quantity of the mixed composition.

Ex. 1001, 9:37–46, 11:3–12.

D. Prior Art References Relied Upon by Petitioner

Petitioner relies on the following prior art:

- 1. United States Patent No. 5,386,803, issued February 7, 1995 (“Hughes,” Ex. 1006);
- 2. United States Patent No. 5,458,091, issued October 17, 1995 (“Pattengill,” Ex. 1008).

E. Instituted Ground of Unpatentability

References	Basis	Claims Challenged
Hughes and Pattengill	§ 103	1–13, 30, and 32

II. ANALYSIS

A. *Claim Construction*

The Board interprets claims in an unexpired patent using the broadest reasonable construction in light of the specification of the patent in which

they appear. 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1277–79 (Fed. Cir. 2015) (“We conclude that Congress implicitly approved the broadest reasonable interpretation standard in enacting the AIA.”), *cert. granted sub nom. Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 890 (mem.) (2016). Under the broadest reasonable interpretation standard, claim terms are given their ordinary and customary meaning in view of the specification, as would be understood by one of ordinary skill in the art at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In instituting trial, we expressly construed the term “mean particle size (MPS)” to mean “the average of a representative sample of particle sizes or groupings of particle sizes.” Dec. 5–7. Neither party specifically addresses or contests this claim construction, and we see no reason to modify it in light of the record developed at trial. Accordingly, we maintain our construction of the term “mean particle size (MPS)” to mean “the average of a representative sample of particle sizes or groupings of particle sizes.”

All other terms are accorded their ordinary and customary meaning as would be understood by one of ordinary skill at the time of the invention.

B. Obviousness Arguments

Petitioner argues that claims 1–13, 30, and 32 are obvious over the combination of Hughes and Pattengill. Pet. 52–60. Petitioner relies on the Declaration of John Hughes (Ex. 1005, the “Hughes Declaration”), submitted with the Petition, and the Declaration of Phillip Greene (Ex. 1016, the “Greene Declaration”), submitted with the Reply. In opposition to Petitioner’s contentions, Patent Owner relies on the Declaration of Marc

Herpfer (Ex. 2013) and the Declaration of Dr. Robert D. DeLuca (Ex. 2015), submitted with the Patent Owner Response.

In resolving the question of the obviousness of the claims, we consider the following underlying factual determinations: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) secondary considerations of non-obviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). Petitioner bears the burden of establishing obviousness of the challenged claims by a preponderance of the evidence. 35 U.S.C. § 316(e).

i. The Prior Art

a. Hughes (Ex. 1006)

Hughes is directed to a composition and method of absorbing animal dross. Ex. 1006, Abstract. Hughes discloses a composition comprising a combination of bentonite clays, “particularly about 1% to about 50% by weight sodium bentonite, and about 50% to [about] 99% by weight Fuller’s Earth, or calcium bentonite,” that absorbs animal dross and related liquids. *Id.* Hughes provides that “the sodium and calcium bentonite clays in the litter box absorbent composition have a particle size ranging from about 50u (microns) to about 3350u in diameter,” and “preferably in a particle size ranging from about 600u to about 3350u in diameter; or, in other words, in a particle size of from about 6 mesh to about 100 mesh.” *Id.* at 7:6–11.

Hughes also provides that “the sodium and calcium bentonite clays should be present in the composition in particle sizes across substantially the entire range of about 600u to about 3350u because the smaller diameter water-swallowable bentonite particles, upon being wetted, swell and serve as

‘bridges’ between larger, wetted bentonite particles.” *Id.* at 7:20–26. Hughes allows for other litter box absorbents, such as clays, sand, or cellulose-based materials, but cautions that any “any optionally added ingredient cannot be present in an amount that materially and adversely affects the ability of the sodium and calcium bentonite clays to absorb liquid dross products.” *Id.* at 7:41–44.

b. Pattengill (Ex. 1008)

Pattengill discloses a clumpable animal litter mixture having about 5 to 50 weight percent bentonite, about 0.1 to 25 weight percent gum-containing clumping agent, and balance filler particulate. Ex. 1008, Abstract. Upon contact with urine, the mixture agglomerates such that the clump of agglomerated bentonite, gum-containing clumping agent, filler particulate, and urine is capable of removal with a perforated scoop after as little as one minute of formation. *Id.* at 2:41–44. Pattengill tests a number of mixtures to determine the clumpability of different mixtures with different constituents.

Pattengill’s Table 1 provides that Sample 11 has the brand name “Tidy Cat w/baking soda,” the description “Natural Granules with odor fighting bi-sulfite complex and baking soda” and “Major components (wt %)” identified as “NA.” *Id.* at 3:26–64. The footnotes to Table 1 indicate that the description is “[a]s noted on the bag containing the commercial litter products,” and that “NA” means “Not Available.” *Id.* at 3:61–62.

Pattengill’s Table 8 provides the following:

- Sample 29 has the brand name “Tidy Cat with Baking Soda” and the description “Clay & Baking Soda.”
- Sample 33 has the brand name “Scoop Fresh” and the description “Clumping Litter (Bentonite).”

- Sample 32 has the brand name “Stabilizer” and the description “>75% Grade Plantago.”

Pattengill’s Table 11 provides the following information regarding Mixture 11, where the values in parentheses () correspond to the samples of Table 8:

11: 49.4%(29)*, 19.8%(29)**, 29.6%(33)**, 1.2%(32)***.

Id. at 13:45–60. The asterisks following the table provide the following information: *-8 + 16 M (-2.36 mm+ 1.18 mm); **-16 + 30 M (-1.18 mm+ 0.60 mm); ***-200 M (-75 µm). *Id.*

ii. Analysis

Petitioner argues that claims 1–13, 30, and 32 are obvious over the combination of Hughes and Pattengill. Pet. 52–60. Specifically, Petitioner argues:

Challenged Claims 1–13, 30 & 32 of the ’019 Patent not otherwise anticipated by [Hughes] or Pattengill, would have been obvious to a person of ordinary skill in the art at the time of the alleged invention of the ’019 Patent, under 35 U.S.C. § 103, in view of either [Hughes] or Pattengill, or in view of the combination of the two references.

Id. at 52 (citing Ex. 1005 ¶ 136).

Regarding challenged claims 1, 30, and 32, Petitioner argues:

As discussed above, both [Hughes] and Pattengill (*e.g.*, Mixture 11) Patents indisputably expressly disclose mixes of *non-swelling* and *swelling* clay particles having mean particle sizes below 4 mm and 2 mm, respectively -- and the average particle size of the *non-swelling* clay material is greater than that of the *swelling* clay. Even ignoring these clear anticipatory references, Challenged Claims 1, 30 & 32 would have been obvious in view of Hughes and Pattengill.

Id. at 52–53.

Petitioner relies on paragraph 136 of the Hughes Declaration to support its arguments regarding the combination of Hughes and Pattengill. Paragraph 136 is reproduced below:

136. Thus, any of the Subject Claims of the '019 Patent not otherwise disclosed by [Hughes] or Pattengill individually, most certainly, in my opinion, would have been obvious to a person of ordinary skill in the art at the time of the alleged invention of the '019 Patent in light of these references taken together.

Ex. 1005 ¶ 136. Petitioner does not identify, and we do not find in the record, any other statements by Mr. Hughes regarding reasons why or how one of ordinary skill in the art would have combined Hughes and Pattengill.

Patent Owner argues, first, that Petitioner fails to make out a prima facie case that the challenged claims are unpatentable. PO Resp. 6. Specifically, Patent Owner argues that the prior art cited by Petitioner does not teach or suggest the MPS limitations. *Id.* In a similar vein, Patent Owner argues that the cited prior art patents do not disclose, teach, or suggest MPS (*id.* at 29–31) or the need to manipulate MPS (*id.* at 31–33). Instead, according to Patent Owner, the cited prior art patents teach either to equalize sodium bentonite (“NaB”) and calcium bentonite (“CaB”) particle sizes, as in Hughes, or that particle size is not important, as in Pattengill. *Id.* at 33–37.

a. Hughes

Petitioner argues that a “simple calculation of the average, *mean particle size*, of the *non-swelling* clay disclosed in [Hughes] reflects a mean of 1.975 mm (1975 μ) (the average size in the range disclosed in Claims 4 & 16 [(600 μ + 3350 μ)/2]),” which meets and discloses the Claim 1 limitation of “no greater than about 4 millimeters.” Pet. 16. In support of its method

of calculating MPS, Petitioner states that persons of ordinary skill in the art at the time of the invention, “which includes those with a basic understanding of mathematics, understood that if only a range is known, the ‘*mean*’ particle size is determined by adding the largest and smallest sizes in a range and dividing by two.” *Id.* at 16 n.9 (citing Ex. 1005 ¶ 24). With respect to swelling clays, Petitioner argues that Hughes expressly discloses “two particle size ranges of *swelling* clay (sodium bentonite), between: (i) 50 μ and 3350 μ ; and (ii) 600 μ and 3350 μ ; both of which plainly meet and have an average, or *mean*, particle size which is ‘no greater than about 2 millimeters’ (1700 μ or 1.7 mm, and 1975 μ or 1.975 mm, respectively).” *Id.* at 17.

Patent Owner responds that Hughes “discloses using the *same* size particle ranges of sodium and calcium bentonite clays.” PO Resp. 9 (citing Ex. 1006, 7:5–23). Patent Owner points to Hughes’s statement that “the sodium *and* calcium bentonite clays in the litter box absorbent composition have a particle size ranging from about 50u (microns) to about 3350u in diameter, and preferably in a particle size ranging from about 600u to about 3350u in diameter” *Id.* (quoting Ex.1006, 7:5–11) (emphasis by Patent Owner). Patent Owner further emphasizes Hughes’s statement that “the sodium *and* calcium bentonite clays should be present in the composition in particle sizes across substantially the entire range of about 600 μ to about 3350 μ .” *Id.* at 10 (quoting Ex. 1006, 7:19–26) (emphasis by Patent Owner). Patent Owner argues that the “MPS cannot be calculated based upon the upper and lower limits of the ranges, as there is simply insufficient information to do so.” *Id.* (citing Ex. 2013 ¶¶ 5–7; Ex. 2015 ¶¶ 3–6).

There is no disclosure of the MPS of sodium bentonite clay or of calcium bentonite clay in Hughes. Although the clays described in Hughes may have a mean particle size, it is neither disclosed, nor readily ascertainable, based on the information given in Hughes. Petitioner's hypothetical MPS calculations are extrapolated from the highest and lowest values of ranges given by Hughes. Pet. 16–17. In the Petition, Petitioner's calculations are theoretical; no experiments or further measurements support Petitioner's assertion that the Hughes's clays have any specific MPS values, or that those values, even if they were calculated or calculable, meet the MPS limitations of claim 1. Under our construction of the term “mean particle size,” which neither party disputes, the average of a representative sample of particle sizes or groupings of particle sizes is needed to determine the mean particle size. Petitioner has not established that a simple average of the highest and lowest values represents a mean particle size when the particle size distribution is unknown, and may be non-uniform.

Although we note Petitioner's argument that “it is well-known that groupings of particle sizes correspond to a bell curve” (Reply 8), this does not mean that all particle size distributions are uniform. Patent Owner's experts opine that MPS “cannot be calculated based upon the upper and lower limits of the ranges, as there is simply insufficient information to do so.” PO Resp. 10 (citing Ex. 2013 ¶¶ 5–7; Ex. 2015 ¶¶ 3–6). As noted by Patent Owner, Petitioner's own declarant, Mr. Greene, testified that not all clay particle size distributions form normal distribution curves. Paper 24, 2–3. Even if we were to accept that the upper and lower limits of the ranges in Hughes disclose groupings or bins of particle sizes (Reply 9), we have insufficient information before us about the distribution of particles between

those two bin sizes. *See* Ex. 2001, 3 (indicating that at least Mesh (U.S. standard sieve sizes) 10, 12, 16, 20, 30, 40, 50, 60, 80, 100, 150, 200, 270, and 325 may be plotted). If 3350 μ and 50 μ correspond to Mesh 6 and 270, and if 3350 μ and 600 μ correspond to Mesh 6 and 30 (Reply 10), there are still a number of other groupings or bin sizes in between those two about which we know nothing. We are unpersuaded by Petitioner's assertion that "[t]wo bins are plainly representative." Reply 9. The distribution of the particles in Hughes may or may not be represented by a perfect bell curve, but without additional information before us to support Petitioner's position, we are unpersuaded.

The parties also dispute the meaning of the "bridges" passage in Hughes:

To achieve the fullest advantage of the present invention, the sodium and calcium bentonite clays should be present in the composition in particle sizes across substantially the entire range of about 600 μ to about 3350 μ because the smaller diameter water-swallowable bentonite particles, upon being wetted, swell and serve as 'bridges' between larger, wetted bentonite particles.

Ex. 1006, 7:19–26.

Petitioner uses this statement to argue that Hughes "explains the benefit of and preference for smaller sizes of sodium bentonite particles." Pet. 17. Patent Owner argues that Hughes is, "in each instance, referencing 'swelled' bentonite," i.e. sodium bentonite, and that "Petitioner has conceded" that "swallowable bentonite" refers to sodium bentonite, while "non-swallowing bentonite" refers to calcium bentonite. PO Resp. 12, 12 n.2. According to Patent Owner, the passage means "that smaller, NaB particles serve as bridges between larger NaB particles, and says nothing about

relative NaB and CaB particle sizes.” *Id.* at 13. Petitioner replies that this passage “render[s] it obvious to a [person of ordinary skill in the art] that Hughes teaches using smaller average size swelling particles to bridge with larger average non-swelling clay particles.” Reply 5; *see also* Tr. 27:17–19.

We agree with Patent Owner that the Hughes passage says nothing about relative NaB and CaB particle sizes. We do not find support for Petitioner’s assertions based on this passage. Hughes does not appear to distinguish between NaB and CaB when it comes to wettability and swellability, but does appear to treat both NaB and CaB as wettable and swellable clays. Importantly, Hughes provides that “[t]he water-swellable bentonite clays contain various exchangeable cations, including *sodium*, potassium, lithium, ammonium, *calcium* and magnesium.” Ex. 1006, 6:43–45 (emphasis added). Again not distinguishing between calcium bentonite and sodium bentonite, Hughes states that “the combination of bentonite clays” of the invention “are capable of absorbing several times their weight in liquid dross material.” *Id.* at 4:47–52. Elsewhere, Hughes provides that “urine is absorbed by the sodium and calcium bentonite clays.” *Id.* at 5:28–29. In the same vein, Hughes states that “[d]iscrete particles of the *combination of bentonite clays* effectively absorb animal dross and simultaneously agglomerate into a sufficiently large and stable mass,” and “[t]he *combination of sodium and calcium bentonite clays* of the present invention absorb several times *their own weight* of an aqueous fluid.” *Id.* at 1:18–21, 5:8–10 (emphasis added).

We understand that some confusion arises because the ’019 patent characterizes calcium bentonite as a “non-swelling” clay that only expands “so that a fully hydrated clay particle occupies less than about 150 percent of

the volume that the particle occupied in an anhydrous state.” Ex. 1001, 3:59–62. The ’019 patent, conversely, characterizes sodium bentonite as a “swelling clay” that is “typically capable of expanding more than 500 percent during hydration.” *Id.* at 4:42–43. Hughes, however, does not make the same distinction. We recognize that Mr. Hughes briefly presented testimony on the bridges statement (Ex. 1005 ¶¶ 64, 72), but this testimony is not sufficiently detailed to support Petitioner’s position.

In this context, the disputed Hughes passage does not distinguish between NaB and CaB, as Petitioner urges. Without an explicit statement that the passage is referring to one or the other of sodium bentonite or calcium bentonite, Hughes does not express a clear preference for a smaller diameter sodium bentonite particle. In view of this interpretation, together with the statement in Hughes that “the sodium *and* calcium bentonite clays should be present in the composition in particle sizes across substantially the entire range of about 600 μ to about 3350 μ ,” (Ex. 1006, 7:19–26), we are not persuaded by Petitioner’s contention that Hughes teaches using NaB with a smaller mean particle size than the mean particle size of CaB.

b. Pattengill

Petitioner argues that “Pattengill expressly discloses litter *Mixture No. 11* comprised of separate particles of *non-swelling* and *swelling* clays in Table 11, where the *non-swelling* clay particles have sizes between 0.6 mm and 2.36 mm.” Pet. 39. Petitioner represents that Table 8 identifies “ingredient #29, *Tidy Cat with Baking Soda* (*non-swelling* clay with a small amount of baking soda).” *Id.* at 39 n.15. With respect to swelling clays, Petitioner argues that “*Mixture 11* in Pattengill expressly teaches employing *swelling* clay (*Scoop Fresh*, sodium bentonite; Sample No. 33) with particle

sizes in the range of 0.6 mm to 1.18 mm – which are plainly below the claimed ‘no greater than about 2 mm.’” *Id.* at 41. Regarding MPS, Petitioner averages the upper and lower bounds of the disclosed non-swelling and swelling clay particle size ranges of Pattengill to conclude that “a simple calculation of the average, *mean*, particle size of the *non-swelling* clay particles of *Mixture No. 11* yields a mean particle size of 1.52 mm. *See* Ex. 1005 ¶ 108. And, the mean particle size of the swelling clay is 0.89 mm. Ex. 1005 ¶ 108.” *Id.* at 42 (footnote omitted). Petitioner notes that “[w]ith a given range of 0.60 to 1.18 mm, the mean particle size is calculated as follows: $[(0.60 \text{ mm} + 1.18 \text{ mm})/2] = 0.89 \text{ mm}$.” *Id.* at 42 n.17.

Patent Owner argues that Pattengill does not “disclose or discuss the significance or desirability of MPS or the MPS Limitations.” PO Resp. 14. We agree that there is no disclosure of the MPS of sodium bentonite clay or of calcium bentonite clay in Pattengill. Although the clays of Pattengill may have a mean particle size, it is neither disclosed, nor readily ascertainable, based on the information given in Pattengill. Petitioner’s hypothetical MPS calculations are extrapolated from the highest and lowest values of ranges given by Pattengill. Pet. 38–43. In the Petition, Petitioner’s calculations are theoretical; no experiments or further measurements support Petitioner’s assertion that Pattengill’s clays have any specific MPS values, or that those values, even if they were calculated or calculable, meet the MPS limitations of claim 1. Under our construction of the term “mean particle size,” which neither party disputes, the average of a representative sample of particle sizes or groupings of particle sizes is needed to determine the mean particle size. Petitioner has not established that a simple average of the highest and lowest values represents a mean particle size when the particle size

distribution is unknown, and may be non-uniform. *See supra* Section II.B.ii.a. 11–12.

Patent Owner also argues that Pattengill “fails to disclose the content of the commercial litters in Mixture 11 relied upon by Petitioner, and such information was not generally available or known to a [person of ordinary skill in the art].” PO Resp. 14 (citing Ex. 2013 ¶10). Patent Owner elaborates that the ingredients in Scoop Fresh and Tidy Cat with Baking Soda, the two litters combined in Mixture 11, were not available on the product packaging and not otherwise readily available to the public or persons of ordinary skill in the art. *Id.* at 27 (citing Ex. 2013 ¶ 10). Patent Owner challenges Mr. Hughes’s recollection based on personal familiarity with the purported composition of these two litters, arguing that this information would not have been generally known to one of ordinary skill in the art. *Id.* at 27–28.

Petitioner responds that the disclosure of Pattengill could not be more detailed, referring to Table 11, which summarizes Mixture 11. Reply 14. Petitioner argues that Pattengill “expressly distinguishes between samples of swelling and non-swelling clay by using the terms ‘Clay’ vs. ‘Clumping Litter.’” *Id.* (citing Ex. 1016 ¶ 30).

Petitioner’s arguments, however, do not account for the lack of evidence regarding what constitutes Tidy Cat with Baking Soda, or what constitutes Scoop Fresh. Petitioner takes the position that Tidy Cat with Baking Soda, which is identified by Pattengill as “Clay & Baking Soda,” is “non-swelling clay.” Pet. 39. Similarly, Petitioner takes the position that Scoop Fresh, which is identified by Pattengill as “Clumping Litter (Bentonite),” is “swelling clay.” *Id.* Pattengill itself does not go into detail

regarding what is meant by “clay” vs. “clumping litter.” We are left with Petitioner’s expert opinions on the matter.

Mr. Hughes relies on his personal familiarity with the products in question to opine on their content. Regarding Tidy Cat with Baking Soda, he states that he is “personally familiar” with the product based on “competitive testing conducted during my tenure at and by American Colloid Company,” concluding that it “was almost entirely a non-swelling clay product.” Ex. 1005 ¶ 96. Regarding Scoop Fresh, he states that “I am very familiar with this product” and that it is “clear” that “the ‘bentonite’ identified in Pattengill is sodium bentonite – a swelling clay.” *Id.* ¶ 99. Mr. Hughes, however, provides no facts or data on which he bases his opinions or recollections regarding the composition of “Tidy Cat with Baking Soda” or “Scoop Fresh.” Without more, we cannot give much weight to Mr. Hughes’s statements regarding the content of the compositions, particularly when his statements pertain to a physical composition that could be tested to determine its content, or about which specific information could be obtained. We find that Mr. Hughes’s opinions are not persuasive as they are not supported by the evidence of record. *See* 37 C.F.R. 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed. Cir. 1985) (stating a lack of objective support for an expert opinion “may render the testimony of little probative value in [a patentability] determination”).

Mr. Greene’s testimony regarding the composition of these products is similarly unsupported. He states that he is “personally familiar with” the

Tidy Cat with Baking Soda product, which a person of ordinary skill in the art would have understood “comprises non-swelling clay.” Ex. 1016 ¶ 30. He also states that “[t]he ingredients listed on the package stated that it was ‘ground clay,’ which someone skilled in the art at the time would likely conclude was non-swelling clay such as Fuller’s Earth or calcium bentonite, which they could easily confirm.” *Id.* He details methods of determining types of clay that one of ordinary skill in the art could use, such as free swell tests and rudimentary microscopic analysis, but does not go on to confirm the composition of Tidy Cat with Baking Soda. *Id.* at ¶¶ 30–32. He also states that he is “personally familiar with” the Scoop Fresh product, and Pattengill “clearly identifies Scoop Fresh as sodium bentonite (‘Clumping Litter (Bentonite)’).” *Id.* at 33. He testifies further that one of ordinary skill in the art could have performed tests to determine the composition of Scoop Fresh, but there is no indication that any such tests were performed. *Id.* Because Mr. Greene’s testimony on this matter does not disclose the underlying facts or data on which the opinion is based, we are not inclined to give it much weight. 37 C.F.R. 42.65(a).

Finally, Petitioner argues in its Reply that the challenged claims are obvious in view of Pattengill. Reply 13–16. The Decision on Institution, however, specified that we instituted *inter partes* review only on the ground of whether claims 1–13, 30, and 32 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Hughes and Pattengill, and “no other ground set forth in the Petition as to any challenged claim is authorized.” Dec. 15. The ground of obviousness based on Pattengill alone was presented in the Petition, but we did not institute *inter partes* review on that ground. Thus, to the extent that Petitioner’s arguments are directed to

obviousness in view of Pattengill alone, they are not properly part of this proceeding. Even if we were to consider Pattengill alone, we find that Pattengill does not render the challenged claims obvious, for the reasons discussed above.

c. Reasons to Combine Hughes and Pattengill

Patent Owner also disputes that Petitioner met its burden of showing obviousness by a preponderance of the evidence. PO Resp. 18. Patent Owner argues that Petitioner and Mr. Hughes do not provide any reason why a person of ordinary skill in the art would have understood the MPS limitations to have been obvious, or to be a result-effective variable. *Id.* at 20. Patent Owner also argues that “Petitioner and Mr. Hughes never state *how or why* the *combination* of [Hughes] and Pattengill discloses MPS or the MPS limitations.” *Id.* at 21.

In the Reply, regarding the combination of the references, Petitioner argues that “Hughes and Pattengill are directed to the *exact same thing* – clumping litters comprised of swelling and non-swelling clay.” Reply 3. Petitioner also argues that overlapping particle sizes also establishes obviousness. Reply 19 (citing *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003)).

The key to supporting a conclusion of unpatentability under 35 U.S.C. § 103(a) is the clear articulation of reasons why the claimed invention would have been obvious. The Supreme Court has clarified this requirement that must be met to establish a prima facie case of obviousness, emphasizing that the “analysis should be made explicit.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Although the reasoning may draw from numerous intrinsic and extrinsic sources, conclusions of obviousness “cannot be

sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.* (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

We have already determined that the limitations of the challenged claims are not present in the prior art. *See supra*. Petitioner’s presentation of its case regarding reasons to combine Hughes and Pattengill, summarized substantially in its totality above, is not extensive. *Id.*

Although the references may have interrelated teachings, as Petitioner asserts in its Reply, Petitioner has not explained persuasively how or why a person of ordinary skill in the art would have combined the features of Hughes with those of Pattengill. Petitioner’s assertion that the prior art references are from the same field provides insufficient analysis concerning why and how a person of ordinary skill in the art would have modified or combined the prior art in the manner asserted, and does not articulate the required “reasoning with some rational underpinning to support the legal conclusion of obviousness.” *See KSR*, 550 U.S. at 418 (“[I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine elements in the way the claimed new invention does.”).

Petitioner’s assertion that overlapping particle sizes also establishes obviousness is unsupported by analysis sufficient to support a successful argument. Reply 19. Even if we were satisfied that Petitioner had presented this argument in a timely manner in the Petition, rather than for the first time in its Reply, and even if we were satisfied that Petitioner had shown that the compositions and distributions of Hughes and Pattengill are sufficiently

definite to establish that the ranges of those reference overlap with those of the '019 compositions, Petitioner's brief argument on this topic fails to establish that the allegedly overlapping ranges of Hughes, Pattengill, and the '019 patent render the challenged claims obvious. *Id.* at 20.

d. Dependent Claims

Claims 2–13 each depend directly or indirectly from claim 1. Petitioner contends these claims are also unpatentable under 35 U.S.C. § 103 based on Hughes and Pattengill. Pet. 54–60. The dependent claims add limitations directed to the type of clays (claims 2 and 3), the ratios of MPS of the non-swelling clay to the swelling clay (claims 4 and 5), the percent weight of the non-swelling clay and swelling clay (claims 6, 7, 9, and 10), the particle size of the non-swelling clay and swelling clay (claims 8, 11, and 12), and the addition of an organic clumping agent (claim 13). All of these claims nevertheless also require the mean particle size limitations of claim 1, which we have determined are not met by the combination of Hughes and Pattengill. We determine, therefore, that the supporting evidence fails to demonstrate, by a preponderance of the evidence, that dependent claims 2–13 would have been obvious over the combination of Hughes and Pattengill.

Independent Claim 30, which is directed to a method for making a clumping animal litter, also requires that the mean particle size of the non-swelling clay material is greater than the mean particle size of the swelling clay. For largely the same reasons stated above, Hughes does not disclose that the mean particle size of the non-swelling clay material is greater than the mean particle size of the swelling clay, as is required by claim 30, and claim 32 that depends therefrom.

After considering the parties' arguments and the supporting evidence of record, we determine that Petitioner has not shown by a preponderance of the evidence that claims 1–13, 30, and 32 are unpatentable as obvious over the combination of Hughes and Pattengill.

C. State of the Record

In its Patent Owner Response, Patent Owner notes that “[d]espite the Board’s finding that neither [Hughes nor Pattengill] discloses MPS, and despite Patent Owner’s request for rehearing, Petitioner did not file a motion to submit supplemental information in accordance with 37 C.F.R. § 42.123 within one month of the date the trial was instituted.” PO Resp. 23. Patent Owner argues that, consequently, Petitioner is “limited by the record filed with the Petition.” *Id.* After Petitioner filed its Reply, in which Petitioner does not appear to address this argument, we granted Patent Owner authorization to file a three-page Sur-Reply to address Patent Owner’s contention that Petitioner presented arguments and evidence in the Reply that are not contained in the Petition. Specifically, Patent Owner contends that the arguments and evidence presented in the Reply are not contained in the Petition, and argues that Hughes teaches away from combination with Pattengill. Sur-Reply 1–3.

Rule 42.22(a)(2) provides that a petition must include “[a] full statement of the reasons for the relief requested, including a detailed explanation of the significance of the evidence including material facts, and the governing law, rules, and precedent.” 37 C.F.R. § 42.22(a)(2). Rule 43.23(b) provides that “[a] reply may only respond to arguments raised in the corresponding . . . patent owner response.” *Id.* § 42.23(b). The Board’s

Trial Practice Guide also addresses the purpose and proper content of replies:

While replies can help crystallize issues for decision, a reply that raises a new issue or belatedly presents evidence will not be considered and may be returned. The Board will not attempt to sort proper from improper portions of the reply. Examples of indications that a new issue has been raised in a reply include new evidence necessary to make out a *prima facie* case for the patentability or unpatentability of an original or proposed substitute claim, and new evidence that could have been presented in a prior filing.

Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,767 (Aug. 14, 2012).

It is of the utmost importance that petitioners in IPR proceedings adhere to the requirement that the initial petition identify “with particularity” the “evidence that supports the grounds for the challenge to each claim.” 35 U.S.C. § 312(a)(3). “All arguments for the relief requested in a motion must be made in the motion.” 37 C.F.R. § 42.23(b). As stated by the Federal Circuit: “Once the Board identifies new issues presented for the first time in reply, neither this court nor the Board must parse the reply brief to determine which, if any, parts of that brief are responsive and which are improper.” *Intelligent Bio-Systems, Inc. v Illumina Cambridge Ltd.*, No. 2015–1693, 2016 WL 2620512, at *8 (Fed. Cir. May 9, 2016).

The Petition was supported solely by the Hughes Declaration. As noted above, Mr. Hughes’s declaration included only one short paragraph regarding the combination of the references. Ex. 1005 ¶ 136. Neither the Petition nor the Hughes Declaration provides further analysis regarding whether the claimed mean particle size values are obvious from the combination of Hughes and Pattengill. The Greene Declaration, conversely,

goes into more detail regarding combining the Hughes and Pattengill references. *See, e.g.*, Ex. 1016 ¶¶ 39, 41–42, 44; Tr. 45:7–9. Patent Owner, in its deposition of Mr. Greene, elected not to cross-examine him on the issue of reasons to combine the Hughes and Pattengill references. Tr. 45:13–24. Patent Owner’s position is that the burden of proof that there should have been a combination is on Petitioner. Tr. 46:11–12.

In our view, Petitioner’s arguments do more than merely address Patent Owner’s argument that Petitioner did not establish that the combination of Hughes and Pattengill renders the challenged claims obvious. Rather, Petitioner attempts to provide new arguments and evidence that were not set forth clearly in the Petition as to why the combination of Hughes and Pattengill renders the challenged claims obvious. Because Petitioner waited until the Reply to make these arguments and serve this evidence on Patent Owner, Patent Owner was unable to respond fully to Petitioner’s arguments. The Sur-Reply allowed Patent Owner a brief opportunity to present responsive arguments, but not to serve responsive evidence. Thus, consideration by the Board of the arguments in the Reply and evidence presented in the Greene Declaration in support thereof would be unfair to Patent Owner. Petitioner could have presented this argument and evidence with the Petition, and has not contended or offered any evidence to show otherwise.

Because Petitioner belatedly presented these new arguments and evidence to make its case that the combination of Hughes and Pattengill would have been obvious, we decline to consider the portions of the Reply and the Greene Declaration on this issue. *See Office Trial Practice Guide*, 77 Fed. Reg. at 48,767. Although Patent Owner did file observations

regarding the cross-examination of Mr. Greene, such observations are not designed for submitting substantive arguments. *See id.* at 48,768 (“An observation (or response) is not an opportunity to raise new issues, re-argue issues, or pursue objections.”). Considering the new arguments and evidence at this late stage would not serve the interests of justice. We have, however, reviewed and considered the arguments in the Petition and evidence therein. We agree with Patent Owner that Petitioner has not provided adequate explanation or evidence to support its contention that one of ordinary skill in the art at the time of the invention would have combined Hughes and Pattengill.

D. Hughes Testimony

Patent Owner argues that Mr. Hughes’s testimony should be given no weight, as he provides his own opinion rather than what would have been understood by a person of ordinary skill in the art at the time of the invention. PO Resp. 24. Petitioner counters that Mr. Hughes may opine as to what was understood by a person of ordinary skill in the art, even if he has a high skill set. Reply 21.

Petitioner argues in the Petition that the person of ordinary skill in the art at the time of the invention of the ’019 patent “is apparent from the cited art, and includes a person with an undergraduate scientific or engineering degree in a relevant field (such as chemistry, materials, and/or mechanical or process engineering) and/or approximately three years of relevant industry or academic experience.” Pet. 7 (citing Ex. 1005 ¶ 22). Patent Owner agrees with this definition. PO Resp. 24 (citing Ex. 2013 ¶ 3).

In light of the evidence before us, we find, as suggested by Petitioner and agreed to by Patent Owner, that the references themselves represent the

level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the level of ordinary skill in the art usually is evidenced by the references themselves); *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (finding that the Board of Patent Appeals and Interferences did not err in concluding that the level of ordinary skill in the art was best determined by the references of record). Moreover, because the specific level of skill suggested by Petitioner was agreed to by Patent Owner, and because it is open-ended in its use of the term “includes,” we agree that the level of ordinary skill in the art “includes a person with an undergraduate scientific or engineering degree in a relevant field (such as chemistry, materials, and/or mechanical or process engineering) and/or approximately three years of relevant industry or academic experience.”

Regarding the testimony of Mr. Hughes, we can accord appropriate weight to an expert’s testimony, taking into account the expert’s understanding of the level of skill in the art at the time of the invention. *See, e.g., Yorkey v. Diab*, 601 F.3d 1279, 1284 (Fed. Cir. 2010) (holding the Board has discretion to give more weight to one item of evidence over another “unless no reasonable trier of fact could have done so”); *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004) (“[T]he Board is entitled to weigh the declarations and conclude that the lack of factual corroboration warrants discounting the opinions expressed in the declarations.”). We are not persuaded that Mr. Hughes’s testimony should be given no weight for allegedly failing to apply the proper level of skill in the art. We accord the appropriate weight to Mr. Hughes’s testimony as indicated in this Decision and for the reasons articulated in this Decision.

E. Patent Owner's Motion to Exclude Evidence

Patent Owner moves to exclude the Greene Declaration (Ex. 1016) because it allegedly contains new evidence and new arguments. Paper 25, 1. We have generally addressed Patent Owner's arguments above, in the discussion regarding our treatment of the evidence and arguments presented in Petitioner's Reply. In view of this discussion, and because we did not rely on the Greene Declaration in reaching our Decision here, we dismiss Patent Owner's Motion to Exclude the Greene Declaration as moot.

III. CONCLUSION

After considering the Petition, Patent Owner Response, Reply, Sur-Reply, and the evidence of record relied on by Petitioner and Patent Owner, we are not persuaded that Petitioner has shown by a preponderance of the evidence that claims 1–13, 30, and 32 of the '019 patent would have been obvious over the combined teachings of Hughes and Pattengill.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner has not shown by a preponderance of the evidence that claims 1–13, 30, and 32 of the '019 patent are unpatentable; and

FURTHER ORDERED that because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2015-00737
Patent 5,975,019

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