

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

CYNTEC COMPANY, LTD.,

Plaintiff,

v.

CHILISIN ELECTRONICS CORP., et
al.,

Defendants.

Case No. 18-cv-00939-PJH

CLAIM CONSTRUCTION ORDER

Re: Dkt. No. 51

On May 15, 2019, the parties' claim construction hearing to construe disputed terms in U.S. Patent Nos. 8,212,641 (the "641 Patent"), 8,922,312 (the "312 Patent"), 9,117,580 (the "580 Patent"), and 9,481,037 (the "037 Patent") (collectively referred to as the "asserted patents") pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996), came on before this court. Plaintiff Cyntec Company, Ltd. ("Cyntec") appeared through its counsel James Yoon and Albert Shih. Defendants Chilisin Electronics Corp. and Chilisin America Ltd. (together, "Chilisin") appeared through their counsel Jamie Lucia and John Abramic. Having read the parties' papers and carefully considered their arguments and the relevant legal authority, the court hereby rules as follows.

BACKGROUND

Cyntec is a major manufacturer of power chokes and the owner of the four asserted patents. Chilisin is also a major manufacturer and supplier in the power choke industry. On February 14, 2018, plaintiff sued defendants for infringement of the four asserted patents. Compl., Dkt. 1. The asserted patents are generally related to the

1 manufacture and/or design of chokes. A choke is an inductor used to block higher-
 2 frequency alternating current (AC) in an electrical circuit, while allowing lower-frequency
 3 or direct current (DC) to pass through. A choke usually consists of a coil of insulated wire
 4 wound around a magnetic core. Chokes are used, for example, in electronic circuits for
 5 stabilizing electric currents and to achieve a noise filtering effect.

6 On December 13, 2018, the parties submitted a Corrected Joint Claim
 7 Construction and Prehearing Statement Pursuant to Patent L.R. 4-3 (Dkt. 51, the “Joint
 8 Statement”), which attached an exhibit containing a table listing the parties’ proposed
 9 constructions for claim terms and other relevant information (Dkt. 51-1).

10 **A. The ’312 Patent and the ’037 Patent**

11 The ’312 Patent is entitled “Electronic Device and Manufacturing Method Thereof.”
 12 See ’312 Patent, Dkt. 51-3. It describes a device comprising a first magnetic powder, a
 13 second magnetic powder, and a conducting wire buried in the mixture of those powders.
 14 The patent explains that the “Vicker’s Hardness” and particle size of the magnetic
 15 powders must be different.¹ By mixing powders with different particle diameters and
 16 hardness, the physical strains of the molding process are reduced, and thus the “core
 17 loss” of the electronic device is reduced. The reduced strain also reduces the
 18 temperature needed to create the device, so the magnetic powders can mold together
 19 without melting the coating around the wire that is buried in the mixture. Finally, having
 20 powders with different size particles means the density of the mixture is increased, which
 21 improves “the permeability of the electronic device.”

22 The ’037 Patent is entitled “Electronic Device and Manufacturing Method Thereof.”
 23 See ’037 Patent, Dkt. 51-5. It discloses the method of making a choke with a mixture of
 24 two magnetic powders with different particle size and hardness. Like the ’312 Patent, the
 25 ’037 Patent also discloses that the magnetic powders and the conducting wire form an
 26 “integral magnetic body” at a temperature lower than the melting point of the insulated
 27

28 ¹ “Vicker’s Hardness” is a way of measuring a material’s hardness by pressing a pyramid-
 shaped diamond into the material and evaluating the indentation the diamond makes.

conducting wire.

B. The '641 Patent

The '641 Patent is entitled "Choke." See '641 Patent, Dkt. 51-2. It is directed to improving fabrication of chokes having relatively small height and size. It explains that during the conventional fabrication process of chokes, the coil containing the conducting wire is a hollow structure that can be cracked or deformed by the surrounding magnetic material during the high-pressure molding process. Id. at 1:40–67. If the conducting wire is very fine, the pressure molding cannot be performed at all. Id. In addition, since the choke includes a resin with a volatile solvent, it has to be rested at a room temperature for some time to vaporize the solvent. See, e.g., id. at 2:33–36.

C. The '580 Patent

The '580 Patent is also entitled "Choke." See '580 Patent, Dkt. 51-2. It explains that "[i]n general, the larger an area of the cross section of the pillar 100 is, the better the characteristics of the choke 1 are." Id. at 1:44–47. Pillars with circular cross-sections have certain advantages, but because space has to be reserved for winding the wire, the area of the cross-section of such a pillar is limited. Id. at 1:44–51. In chokes with a rectangular cross-section of the pillar, "the wire may be damaged at the sharp corners of the pillar, and the characteristics of the choke . . . are worse." Id. at 1:52–59. The '580 Patent improves upon prior chokes by having a non-circular and non-rectangular cross-section.

The '580 patent is a continuation-in-part of U.S. Pat. App. No. 13/331,786, which is a continuation-in-part of the '641 Patent. The '641 patent and U.S. Pat. App. No. 13/331,786 are both incorporated by reference into the '580 patent.

The parties now seek construction of nine disputed terms and phrases, which are contained throughout the numerous claims.

DISCUSSION

A. Legal Standard

"It is a bedrock principle of patent law that the claims of a patent define the

invention to which the patentee is entitled the right to exclude.” Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1115 (Fed. Cir. 2004). “[T]he construction of a patent, including terms of art within its claim, is not for a jury but exclusively for the court to determine. That is so even where the construction of a term of art has evidentiary underpinnings.” Teva Pharm. USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831, 835 (2015) (internal quotation marks and citation omitted).

A patentee is presumed to have intended the ordinary meaning of a claim term in the absence of an express intent to the contrary. See York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed. Cir. 1996). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention[.]” Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005).

The person of ordinary skill in the art is “deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” Id. Because the specification must contain a description of the invention that is clear and complete enough to enable those of ordinary skill in the art to make and use it, “the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

“There are only two exceptions to this general rule [that terms carry their ordinary and customary meaning]: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” Thorner v. Sony Comput. Entm’t Am., LLC, 669 F.3d 1362, 1365 (Fed. Cir. 2012); see also Hill-Rom Servs. v. Stryker Corp., 755 F.3d 1367, 1373 (Fed. Cir. 2014) (“There are no magic words that must be used, but to deviate from the plain and ordinary meaning of a claim term to one of skill in the art, the patentee must, with some language, indicate a clear intent to do so in the patent.”).

1 Although the court must read the claim in view of the specification, claims are not
 2 ordinarily limited to preferred embodiments or illustrative examples appearing in the
 3 specification. Kraft Foods, Inc. v. International Trading Co., 203 F.3d 1362, 1366 (Fed.
 4 Cir. 2000).

5 The words in the claim may also be interpreted in light of the prosecution history, if
 6 in evidence. Teleflex, Inc. v. Ficosa North Am. Corp., 299 F.3d 1313, 1324–25 (Fed. Cir.
 7 2002). The prosecution history “can often inform the meaning of the claim language by
 8 demonstrating how the inventor understood the invention and whether the inventor
 9 limited the invention in the course of prosecution, making the claim scope narrower than
 10 it would otherwise be.” Phillips, 415 F.3d at 1317. These components of the intrinsic
 11 record are the primary resources in properly construing claim terms.

12 In most situations, analysis of intrinsic evidence alone will resolve claim
 13 construction disputes. Vitronics, 90 F.3d at 1583. However, if the court is unable to
 14 resolve a disputed claim term after reviewing the intrinsic evidence, it may consider
 15 extrinsic evidence, such as expert testimony, inventor testimony, and technical treatises
 16 and articles. Id. at 1584; Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298,
 17 1309 (Fed. Cir. 1999). However, while courts have discretion to consider extrinsic
 18 evidence, such evidence is “less significant than the intrinsic record in determining the
 19 legally operative meaning of claim language.” Phillips, 415 F.3d at 1317 (internal
 20 quotation marks omitted).

21 **B. Construction of Disputed Terms and Phrases**

22 The parties agree on the construction of two relevant terms. First, the parties
 23 agree that the term “Vicker’s Hardness” means “a measurement of a material’s ability to
 24 resist deformation from a diamond indenter in the form of a pyramid.” Dkt. 51-1 at ECF
 25 p. 2. Second, the parties agree that “magnetic powder” means “fine particles of magnetic
 26 substance.” See Dkt. 58 at 6; Dkt. 65 at 5; Dkt. 65-2.

27 The parties dispute construction of nine different terms and phrases contained
 28 within the claims of the asserted patents, each of which is addressed below.

Preliminarily, however, the court notes that the parties' briefing also addresses arguments that go to invalidity issues, which are premature and better suited to dispositive motion practice. Accordingly, the court declines to consider the parties' arguments concerning indefiniteness.

1. "Vicker's Hardness of the [first, second] magnetic powder"

The phrase "Vicker's Hardness of the [first, second] magnetic powder" is found in the '312 Patent's claims 1–2, 5–11, 16 & 18, and the '037 Patent's claims 1, 4, 6, 8–13, 15, 16, 19 & 20. See Joint Statement, Ex. A. Plaintiff contends that the phrase need not be construed and should be accorded its plain and ordinary meaning. Defendants contend that the phrase should be construed to mean "the Vicker's Hardness of the powder, as opposed to the hardness of any one individual particle within the powder."

The parties essentially dispute whether the term refers to the hardness of a powder generally, or the hardness of the particles that make up a powder. Plaintiff argues that "the hardness of individual particles within the powders is important" and that "common sense dictates that pressing against a powder of particles may result in displacement of particles rather than deformation of the particles." Dkt. 58 at 8–9. The court agrees.

This term is nearly entirely composed of terms that the parties agree on. The parties agree that "Vicker's Hardness" means "a measurement of a material's ability to resist deformation from a diamond indenter in the form of a pyramid." Dkt. 51-1 at ECF p. 2. There is no dispute there—the question is what must be measured. But the parties also agree that "magnetic powder" means the "fine particles of magnetic substance." By assembling the parties' own agreed-upon constructions, the court concludes that the "Vicker's Hardness of the [first, second] magnetic powder" means the "Vicker's Hardness of a fine particle of the [first, second] magnetic substance."

This construction also accords with the meaning that the term would have to a person of ordinary skill in the art who read the claim terms in the context of the entire patents. The '312 Patent and '037 Patent generally concern mixing a powder composed

of bigger, harder particles and a powder composed of smaller, softer particles. That would lead a person of ordinary skill in the art to understand that the “hardness” of a powder refers to the hardness of its component particles.

2. “magnetic material” & “resin”

The phrase “magnetic material” and the word “resin” are found in the ’641 Patent’s claims 1, 5–9, 17 & 19, and the ’580 Patent’s claim 6. See Joint Statement, Ex. A. Plaintiff contends that they need not be construed and should be accorded their plain and ordinary meanings. Defendants contend that “magnetic material” should be construed to mean “a magnetic material prepared without volatile solvent” and “resin” should be construed to mean “a resin prepared without volatile solvent.”

The parties raise the same arguments and apply the same reasoning to the two terms. That is natural, because the terms are related. In the prior art, volatile solvents have been used to prepare the resin, and the resin is typically a component part of the magnetic material. The court therefore addresses these terms together as well.

As used in the ’641 and ’580 Patents, “magnetic material” fills the winding space to encapsulate the wire. The magnetic material includes both a resin and a magnetic powder. The magnetic material is filled in around the wire, and then it hardens or “cures.” The ’641 Patent explains that a drawback of conventional, prior-art chokes is that the chokes must be rested at room temperature prior to heat-curing to allow the volatile solvent in the magnetic material to dissipate. The specification states that the invention of the ’641 Patent is directed to a choke that can be heat-cured without first being rested at room temperature.

Plaintiff argues that although the patents discuss problems in the prior art with volatile solvents increasing manufacturing time, the patentee never explicitly precluded magnetic materials prepared with volatile solvent. Defendants argue that a person of ordinary skill in the art would understand the term “magnetic material” as used in the patents to mean “a magnetic material prepared without volatile solvent” because the inventors purposefully distinguished their inventions from conventional inductors that

1 required resting at room temperature due to the presence of volatile solvent.

2 Generally speaking, the embodiment described in the specification does not set
3 the boundaries of the claims, and “limitations from the specification are not to be read into
4 the claims.” Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998)
5 (“there is sometimes a fine line between reading a claim in light of the specification, and
6 reading a limitation into the claim from the specification”). However, “[c]laims must be
7 read in view of the specification, of which they are a part.” Markman v. Westview
8 Instruments, 52 F.3d 967, 979 (Fed. Cir. 1995); see also United States v. Adams, 383
9 U.S. 39, 49 (1966) (“claims are to be construed in the light of the specifications and both
10 are to be read with a view to ascertaining the invention”); Slimfold Mfg. Co. v. Kinkad
11 Indus., Inc., 810 F.2d 1113, 1116 (Fed. Cir. 1987) (“Claims are not interpreted in a
12 vacuum, but are part of and are read in light of the specification.”). “One purpose for
13 examining the specification is to determine if the patentee has limited the scope of the
14 claims.” Watts v. XL Sys., Inc., 232 F.3d 877, 882 (Fed. Cir. 2000).

15 “Where the specification makes clear that the invention does not include a
16 particular feature, that feature is deemed to be outside the reach of the claims of the
17 patent, even though the language of the claims, read without reference to the
18 specification, might be considered broad enough to encompass the feature in question.”
19 SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1341 (Fed.
20 Cir. 2001). Specifically, where the written description contemplates only instantiations of
21 the invention without a particular feature and “expressly distinguishes . . . prior art” by
22 explaining that the prior art contained that feature, “one skilled in the art reading the
23 claims, description, and prosecution history would conclude that” the claimed invention
24 does not encompass that feature. O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1581 (Fed.
25 Cir. 1997); SciMed Life Sys., 242 F.3d at 1342 (“discussing the disadvantages of certain
26 prior art structures,” “distinguish[ing] the prior art on the basis of” a particular feature, and
27 describing the “present invention” as excluding that feature, support the “conclusion that
28 the claims should not be read so broadly as to encompass the distinguished prior art”

feature); Tronzo v. Biomet, Inc., 156 F.3d 1154, 1159 (Fed. Cir. 1998) (“[T]he specification specifically distinguishes the prior art as inferior and touts the advantages of the” invention’s different feature. “Such statements make clear that the . . . patent discloses *only* [the different feature] and nothing broader.”).

Plaintiff correctly argues that “[m]ere criticism of a particular embodiment encompassed in the plain meaning of a claim term is not sufficient to rise to the level of clear disavowal.” Thorner, 669 F.3d at 1366; see also Epistar Corp. v. Int’l Trade Comm’n, 566 F.3d 1321, 1336 (Fed. Cir. 2009) (a “single, passing reference to” a feature of prior art “as a relatively unsatisfactory” feature “does not disavow the use of” the feature); Micro Chem., Inc. v. Great Plains Chem. Co., 194 F.3d 1250, 1260 (Fed. Cir. 1999) (no disavowal where criticism was “directed to a particular prior art device . . . not to the [prior art feature] in general” and patent did not “assert that the [prior art feature] itself is the reason for the [criticized] inaccuracies or slowness”). Nor does a patentee disavow a feature by including only embodiments that contain a particular limitation. Thorner, 669 F.3d at 1366. However, although a patentee does not disavow features that are otherwise-within the claim’s language by merely criticizing prior art, criticism can accumulate to “collectively . . . amount[] to disavowal.” Id.

Here, the ’641 Patent expressly and repeatedly explains that a problem with the prior art is that it takes a long time to make chokes. One reason it takes a long time is that the magnetic material needs to sit at room temperature before being heat-cured, and the magnetic material must sit at room temperature only because it contains volatile solvent. The patent repeatedly explains that one of the invention’s benefits is that it can be heat-cured immediately, without sitting at room temperature. Furthermore, the only explained embodiment of the invention does not contain volatile solvent, and the reason that embodiment can be heat-cured immediately is because it does not contain a volatile solvent. Throughout the patents, the absence of volatile solvent is described as a critical feature delivering one of the core benefits of the inventions—the ability to be heat-cured without having to wait for solvent to dissipate.

As such, the '641 and '580 Patents' treatment of the prior art's use of solvent is a far cry from "mere criticism." The inventors unambiguously made a concerted effort to distinguish the patented inventions from the prior art's use of volatile solvent. For example, the patents state:

- "Since the exterior resin 50 of the choke 20 has a volatile solvent, and is a mixed material formed by a plurality of formulations, after it is coated in the winding space S, it has to be rested at a room temperature for 30 minutes to vaporize the solvent, so as to perform a heat-curing process. Therefore, a fabrication time of the choke 20 is relatively long." '641 Patent at 2:16–23.
- "The present invention is directed to a choke having a magnetic material that can be directly heat-cured without being rested in a room temperature for some time, so as to shorten a fabrication time." Id. at 2:32–35.
- "In the present invention, since the choke applies the magnetic material formed by the thermosetting resin and the iron powder, after the magnetic material is coated in the winding space, it can be directly heat-cured without being rested in the room temperature for some time. Compared to the conventional technique, not only the fabrication time of the choke can be shortened, but also cracking and deforming of the drum-core can be avoided after the magnetic material is heated." Id. at 4:40–50.
- "In an embodiment of the present invention, the thermosetting resin is an organic material of polymer, and does not contain a volatile solvent." Id. at 3:64–67; see also id. at 8:29–37 ("Referring to FIG. 3 and FIG. 5 The magnetic material 130 is composed of a thermosetting resin and a metallic powder, wherein the thermosetting resin is an organic material not containing volatile solvent").
- "It should be noted that since the magnetic material 130 of the present embodiment does not contain the volatile solvent, after the magnetic material 130 is coated, it can be directly heat-cured without being rested in the room temperature for some time, and cracking and deforming of the drum-core can be avoided when the magnetic material 130 is heat-cured, so that compared to the conventional technique . . . a fabrication time of the choke 100 can be shortened[.]" Id. at 9:26–39.
- "[A] difference between the choke 100 of the present embodiment and the choke 20 of FIG. 2 [prior art] is that the magnetic material 130 used by the choke 100 does not contain the volatile solvent, and the magnetic material 130 is composed of the thermosetting resin and the iron powder, though the magnetic material 30 used by the choke 20 of FIG. 2 contains the volatile solvent[.]" Id. at 10:20–30.

- “It should be noted that since the magnetic material 34 of this embodiment does not contain any volatile solvent. After the magnetic material 34 is coated, it can be directly heat-cured without being rested in the room temperature for a span of time, and cracking and deforming of the core 30 can be avoided or significantly reduced when the magnetic material 34 is heat-cured. Therefore, compared to the conventional technique, the fabrication time of the choke 3 can be significantly shortened[.]” ‘580 Patent at 6:46–55.
- “Since . . . the thermosetting resin does not contain any volatile solvent, during a heat-curing process, a thermal stress generated due to expansion and contraction of the thermosetting resin can be reduced[.]” *Id.* at 5:41–46.

The patent makes it apparent that heat-curing without a resting period at room temperature is a critical overall benefit of the invention, and the only way that is accomplished as explained by the patents is by excluding volatile solvent. The differentiation from prior art based on the absence of volatile solvent—and the according benefits—is so overwhelming and pervasive that the court finds the inventors disclaimed use of volatile solvents in the magnetic material and resin. Accordingly, the court construes the term “magnetic material” to mean “a magnetic material prepared without volatile solvent” and the term “resin” to mean “a resin prepared without volatile solvent.”

3. “encapsulating the wire”

The phrase “encapsulating the wire” is found in the ‘641 Patent’s claims 1, 5–9, 17 & 19, and the ‘580 Patent’s claim 6. See Joint Statement, Ex. A. Plaintiff contends that the phrase need not be construed and should be accorded its plain and ordinary meaning. Defendants contend that the phrase should be construed to mean “completely enclosing the entire wire within the winding space.”

The parties’ dispute essentially concerns whether the wire within the winding space can touch anything other than magnetic material, specifically whether the coiled wire can be pressed against itself or against the walls of the winding space.

Plaintiff argues that Figure 5 of the ‘641 Patent depicts a preferred embodiment of the invention where none of the wire portions are completely enclosed in their entirety by the magnetic material because portions of the wire are in contact with the inner walls of

1 the pillar, the top board, the bottom board, and/or other wire portions. Plaintiff also
 2 argues that defendants' proposal injects ambiguity because it merely replaces
 3 "encapsulating" with the synonym "enclosing." Plaintiff also argues that defendants'
 4 proposal would require "the entire wire" to be "within the winding space," but it is
 5 undisputed that at least the two ends of the wire terminate (or are "disposed") outside of
 6 the winding space. See '641 Patent at Fig. 5; id. at 7:50–58 ("Two ends of the wire 120
 7 can be respectively bended to the bar-shaped guide slots 116d along the arc-shaped
 8 guide slots 116c, and can be disposed on the pair of electrodes 140 to electrically
 9 connect the pair of electrodes 140. Then, a solder paste 150 can be soldered to cover
 10 the wire 120, so as to fix the wire 120 on the bar-shaped guide slots 116d.").

11 Defendants argue that the '641 Patent states that magnetic material encapsulates
 12 the wire, and at no point does it indicate that any meaning other than the plain meaning
 13 of "encapsulating" applies. They also argue that Figure 5 is not dispositive because patent
 14 figures are merely illustrative. Defendants also argue that the patent claims refer to the
 15 portion of the wire that is within the winding space itself, so only the portion of the wire in
 16 the winding space must be "completely enclosed."

17 The parties agree that some portion of the wire exits the winding space, so a
 18 construction adding the words "completely" and "entire" to modify how the wire is
 19 enclosed cannot be in line with how a person of ordinary skill in the art would understand
 20 the term. For the "entire" wire in the winding space to be "completely" enclosed, its ends
 21 would also have to be enclosed. After those adjectives are rejected, the remaining
 22 dispute concerns whether to replace "encapsulating" with "enclosing." But "merely
 23 rephrasing or paraphrasing the plain language of a claim by substituting synonyms does
 24 not represent genuine claim construction." C.R. Bard, Inc. v. United States Surgical
 25 Corp., 388 F.3d 858, 863 (Fed. Cir. 2004).

26 Moreover, the plain meaning of the claim language allows for the wire to touch the
 27 walls of the pillar and/or other portions of the coiled wire. First, the ordinary meaning of
 28 the word "encapsulate" means to enclose in or as if in a capsule. That does not require

1 one material to completely surround the wire such that the wire touches nothing else.
2 That ordinary meaning is in line with how the patent uses the term. For example, Figure
3 5 clearly shows the wire touching itself and the walls of the winding space. '641 Patent at
4 8:29–34 (“Referring to FIG. 3 and FIG. 5 again, in the present embodiment, the magnetic
5 material 130 fills in the winding space S' and encapsulates the wire 120, wherein the
6 magnetic material 130 fills in the winding space S' by coating.”).

7 Accordingly, the court accords the term “encapsulating the wire” with its plain
8 meaning, which does not require construction.

9 **4. “[filling, filled in] the winding space”**

10 The phrase “[filling, filled in] the winding space” is found in the '641 Patent's claims
11 1, 5–9, 17 & 19, and the '580 Patent's claim 6. See Joint Statement, Ex. A. Plaintiff
12 contends that the phrase need not be construed and should be accorded its plain and
13 ordinary meaning. Defendants contend that the phrase should be construed to mean
14 “occupying all of the winding space other than the wire.”

15 The parties' arguments are very similar to the “encapsulating the wire” arguments
16 discussed above, and the opposition and reply briefs combine the issues. The parties
17 dispute whether the term requires that the magnetic material completely fill the winding
18 space.

19 Plaintiff argues that the word “fill” does not mean “completely occupy.” Defendants
20 argue that a person of ordinary skill in the art would understand that this reference to
21 filling a mold would mean causing the mold to be completely full of magnetic material, not
22 only for maximum inductance, but also for mechanical security and optimum heat
23 extraction during operation of the device.

24 It is not disputed that at least the wire is in the winding space before the magnetic
25 material is poured or “filled” in. So, the word “fill” cannot mean occupy entirely.
26 Defendants get around that inconvenience by arguing that “fill” means fill completely,
27 except for the wire.

28 Here, “fill” or “fill in” means to insert magnetic material into otherwise-unoccupied

space in the winding space. The winding space may be partially occupied by the wire or the material that makes up the pillar, and then the magnetic material fills in the rest. That is the most reasonable way to read the line “a magnetic material, filling the winding space, encapsulating the wire,” because that line uses the word “fill” and assumes that at least the wire is already in that space.

Accordingly, the court construes the term “[filling, filled in] the winding space” to mean “[filling, filled in] the otherwise-unoccupied space in the winding space.”

5. “permeability”

The word “permeability” is found in the ’641 Patent’s claims 1, 5–9, 17 & 19. See Joint Statement, Ex. A. Plaintiff contends that the phrase should be construed to mean “relative permeability,” which in turn means the “ratio of magnetization to that of free space.” Defendants agree that the term means “relative permeability,” which in turn means the “ratio of magnetization to that of free space,” but they argue that the term is indefinite.

Pursuant the parties’ agreement on the construction of the term, the term “permeability” is construed to mean “relative permeability.” The court does not reach the parties’ arguments regarding whether the term is indefinite, and the court will entertain indefiniteness arguments with any dispositive motions.

6. “substantially parallel”

The phrase “substantially parallel” is found in the ’580 Patent’s claims 1–6, 12 & 14. See Joint Statement, Ex. A. Plaintiff contends that the phrase need not be construed and should be accorded its plain and ordinary meaning. Defendants contend that the phrase is indefinite. Yet, the parties agree that “substantially” means “within the range of typical manufacturing deviation.” Dkt. 58 at 18–19; Dkt. 65 at 17; see also ’580 Patent at 3:30–65.

The court accords the phrase “substantially parallel” with its plain meaning, which the parties agree is “parallel within the range of typical manufacturing deviation.” The court does not reach the parties’ arguments regarding whether the term is indefinite, and

the court will entertain indefiniteness arguments with any dispositive motions.

7. “by means of the first hardness difference of the first magnetic powder and the second magnetic powder, the mixture of the first magnetic powder and the second magnetic powder and the conducting wire buried therein are combined to form an integral magnetic body at a temperature lower than the melting point of the insulating encapsulant”

The phrase “by means of the first hardness difference of the first magnetic powder and the second magnetic powder, the mixture of the first magnetic powder and the second magnetic powder and the conducting wire buried therein are combined to form an integral magnetic body at a temperature lower than the melting point of the insulating encapsulant” is found in the ’312 Patent’s claims 1–2, 5–11, 16 & 18. See Joint Statement, Ex. A. Plaintiff contends that the phrase need not be construed and should be accorded its plain and ordinary meaning. Defendants argue that the phrase is indefinite.

The court accords the phrase “by means of the first hardness difference of the first magnetic powder and the second magnetic powder, the mixture of the first magnetic powder and the second magnetic powder and the conducting wire buried therein are combined to form an integral magnetic body at a temperature lower than the melting point of the insulating encapsulant” with its plain meaning, which does not require construction. The court does not reach the parties’ arguments regarding whether the term is indefinite, and the court will entertain indefiniteness arguments with any dispositive motions.

8. “iron powder”

The phrase “iron powder” is found in the ’641 Patent’s claims 1, 5–9 & 17. See Joint Statement, Ex. A. Plaintiff contends that the phrase need not be construed and should be accorded its plain and ordinary meaning. Defendants contend that the phrase should be construed to mean “a powder of unalloyed iron.”

Defendants argue that there are three relevant, distinct terms: (1) iron, which is an

1 element on the period table with symbol Fe; (2) iron alloy, which is a combination of iron
2 and one or more other metals; and (3) ferrite, which is a ceramic compound that includes
3 iron oxide. Defendants argue that each of these substances would be viewed as discrete
4 and different substances by a person of ordinary skill in the art, and such a person would
5 understand that “iron powder” does not include alloyed iron powder.

6 Plaintiff argues that nowhere in the intrinsic record does the patentee disclaim or
7 disavow “iron powder” to exclude alloys, and the word “unalloyed” does not appear
8 anywhere in the intrinsic record. Plaintiff also argues that the term’s use in extrinsic
9 evidence, including the other asserted patents, only require “iron powder” to have iron as
10 its major ingredient.

11 To determine what meaning the term would have to a person of ordinary skill in
12 the art at the time of the invention, the court first considers the claims in view of the
13 patent. The ‘641 Patent contains several references to “iron powder.” E.g., ‘641 Patent
14 at 3:59–62; 4:38–40; 8:39–53.

15 The specification describes “an embodiment of the present invention” in which “a
16 material of the drum-core includes Ni—Zn ferrite or Mn—Zn ferrite, and the metallic
17 powder includes an iron powder.” Id. at 3:59–62. Clearly, the patent distinguishes the
18 term “ferrite” (which is a mixture containing iron) from “iron powder.” So, iron powder
19 cannot mean simply any powder containing iron, or predominately iron. Plaintiff
20 concedes as much. See Dkt. 64 at 13–14 (“the patentees distinguished ferrite”). This
21 conclusion is strengthened upon examination of the intrinsic patent prosecution evidence,
22 which explains that iron and ferrite have relevant “different material characteristics” and
23 makes clear that “iron powder” does not encompass ferrite.² Amendment and Response
24 to Office Action, Dkt. 65-14 at pp. 5–8. The patent itself and the intrinsic patent

25
26 ² “The prosecution history, which we have designated as part of the ‘intrinsic evidence,’
27 consists of the complete record of the proceedings before the PTO and includes the prior
28 art cited during the examination of the patent.” Phillips, 415 F.3d at 1317. It “can often
inform the meaning of the claim language by demonstrating how the inventor understood
the invention and whether the inventor limited the invention in the course of prosecution,
making the claim scope narrower than it would otherwise be.” Id.

1 prosecution evidence strongly suggest that the patentee distinguished between iron
2 powder, ferrite powder, and iron alloy powder. The court next turns to extrinsic evidence.

3 If the court is unable to resolve a disputed claim term after reviewing the intrinsic
4 evidence, it can turn to extrinsic evidence. See Vitronics, 90 F.3d at 1584; Pitney Bowes,
5 182 F.3d at 1309. Courts often consider how related patents use terms. For example,
6 courts “presume, unless otherwise compelled, that the same claim term in the same
7 patent or related patents carries the same construed meaning.” Aventis Pharm. Inc. v.
8 Amino Chemicals Ltd., 715 F.3d 1363, 1380 (Fed. Cir. 2013) (quoting Omega Eng’g, Inc.
9 v. Raytek Corp., 334 F.3d 1314, 1334 (Fed. Cir. 2003)).

10 The ‘580 Patent is related to the ‘641 Patent. The ‘580 Patent cites the
11 ‘641 Patent as a reference, and it is also a continuation-in-part of application
12 No. 13/331,786, which is itself a continuation-in-part of application No. 12/709,912—the
13 application underlying the ‘641 Patent. See ‘580 Patent.

14 The ‘580 Patent explicitly distinguishes between an “iron powder (Fe)” and “a
15 metallic powder,” which is defined to include powders of alloyed iron. ‘580 Patent at
16 5:14–27. When making that distinction, the patent specifies that iron powder means “Fe”
17 (the symbol for the pure element iron), and it provides a list of exemplar “metallic
18 powders” that includes a number of iron alloys. E.g., id. (“In this embodiment, the
19 magnetic powder may comprise an iron powder (Fe) or a metallic powder (e.g. Fe—Ni,
20 Fe—Cr—Si, Fe—Cr, Fe—Co—V, Fe—Ni—Mo, Fe—Si—Al, Fe—B, Fe—Co—B, Fe—
21 Zr—B, Deltamax, Mu metal, 4-79 Permalloy, Mo-Permalloy, Superalloy, Sendust,
22 Power Flux, etc.)”). The language could not be clearer that “iron powder” means pure
23 iron, as distinct from powders of iron alloys. The ‘580 Patent repeatedly draws that same
24 distinction. Id. at 5:65–70 (“the magnetic powder material may be iron, Fe—Al—Si alloy,
25 Fe—Cr—Si alloy, etc.”), 6:10–13 (“The metal soft magnetic material may include iron,
26 Fe—Al—Si alloy, Fe—Cr—Si alloy, stainless steel, and/or some other suitable material.”).

27 The ‘312 Patent and ‘037 Patent also explicitly distinguish between iron powders
28 and iron alloy powders. For example, those patents describe two magnetic powders:

The material of the first magnetic powder . . . is, for example, metal alloy, and the metal alloy is such as Fe—Cr—Si alloy, Fe—Ni alloy, amorphous alloy, Fe—Si alloy, or Fe—Al—Si alloy. The material of the second magnetic powder . . . is, for example, iron or ferroalloy. Preferably, the material of the first magnetic powder . . . is, for example, amorphous alloy, and the material of the second magnetic powder . . . is such as iron.

'312 Patent at 4:30–38; '037 Patent at 4:52–60 (same). Those patents clearly describe powders of metal alloys, including a number of iron alloys, distinctly from powders of both iron and ferroalloy. Id.; see also '312 Patent at 5:11–22 (distinguishing “iron powder” from “metal alloy”), 8:66–9:1 (describing iron alloy Fe—Cr—SI specifically as “Fe—Cr—SI alloy”).

Each of the described patents uses the terms “iron,” “iron powder,” and “alloy” consistently internally and with each other. See generally Paragon Solutions, LLC v. Timex Corp., 566 F.3d 1075, 1087 (Fed. Cir. 2009) (“We apply a presumption that the same terms appearing in different portions of the claims should be given the same meaning unless it is clear from the specification and prosecution history that the terms have different meanings at different portions of the claims.”) (internal quotation marks omitted); see also CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1159 (Fed. Cir. 1997) (“we are obliged to construe the [asserted term] consistently throughout the claims”).

In view of the patent, the patent prosecution history, and the extrinsic evidence of the other asserted patents, the court finds that a person of ordinary skill in the art would understand the phrase “iron powder” as used in the '641 Patent to mean “a powder of unalloyed iron.”

CONCLUSION

In accordance with the foregoing, and for the reasons discussed above, the court construes the parties' disputed terms as follows:

1. “Vicker’s Hardness of the [first, second] magnetic powder” means “Vicker’s Hardness of a fine particle of the [first, second] magnetic substance.”
2. “magnetic material” means “a magnetic material prepared without volatile

1 solvent.”

2 3. “resin” means “a resin prepared without volatile solvent.”

3 4. “encapsulating the wire” is given its plain and ordinary meaning.

4 5. “[filling, filled in] the winding space” means “[filling, filled in] the otherwise-
5 unoccupied space in the winding space.”

6 6. “permeability” means “relative permeability.”

7 7. “substantially parallel” means “parallel within the range of typical manufacturing
8 deviation.”

9 8. “by means of the first hardness difference of the first magnetic powder and the
10 second magnetic powder, the mixture of the first magnetic powder and the
11 second magnetic powder and the conducting wire buried therein are combined
12 to form an integral magnetic body at a temperature lower than the melting point
13 of the insulating encapsulant” is given its plain and ordinary meaning.

14 9. “iron powder” means “a powder of unalloyed iron.”

15 **IT IS SO ORDERED.**

16 Dated: June 20, 2019



17
18 PHYLLIS J. HAMILTON
United States District Judge