No. 2020-1510

In the United States Court of Appeals for the Federal Circuit

ARBMETRICS, LLC,

Plaintiff-Appellant,

v.

DEXCOM INC.,

Defendant-Appellee.

Appeal from the United States District Court
for the Southern District of California, No. 3:18-cv-00134-JLS-MSB.
The Honorable **Janis L. Sammartino**, Judge Presiding.

REPLY BRIEF OF PLAINTIFF-APPELLANT ARBMETRICS, LLC

TIMOTHY E. GROCHOCINSKI
JOSEPH P. OLDAKER
NELSON BUMGARDNER ALBRITTON P.C.
15020 South Ravinia Avenue, Suite 29
Orland Park, Illinois 60462
Telephone: (708) 675-1974

Counsel for Plaintiff-Appellant
Arbmetrics, LLC

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TABLE OF CONTENTS

TABLE OF AUTHORITIES …….. iii

ARGUMENT IN REPLY …… 1

I. An "emulsion" Is Not Limited To A Liquid In A Liquid …….. 1

A. An "emulsion" Is Not Universally Defined As A Liquid In A Liquid …… 1

B. The Intrinsic Evidence Does Not Require Limiting "emulsion" To Only Liquids …… 3

II. The District Court Erred in Its Construction of "oxygen dissolving substance" …….. 7

A. The Intrinsic Evidence Does Not Support The District Court's Construction …….. 8

B. The District Court's Construction Incorrectly Focused On Solubility Only …….. 11

C. The Extrinsic Evidence, Specifically Dexcom's Own Statements, Does Not Support The District Court's Construction …… 13

III. The Term "in contact with" Is Not Limited to Touching …….. 15

A. The Patent Claims Do Not Require That "in contact with" Be Limited to Touching …… 15

B The Patent Specification Does Not Require That "in contact with" Be Limited to Touching …….. 17

C. The Extrinsic Evidence Does Not Require That "in contact with" Be Limited to Touching …….. 19

IV. The District Court Erred in Its Construction of "electrode" ……...….. 22

A. The Patent Claims Do Not Prohibit The "electrode" From Including A Membrane ……. 23

B. The Patent Specification Does Not Prohibit The "electrode" From Including A Membrane ……... 24

V. The District Court Erred in Its Construction of "hydrocarbon oils or solids" ……. 25

CONCLUSION ……..……... 28

CERTIFICATE OF COMPLIANCE

TABLE OF AUTHORITIES

Cases	**Page(s)**
Ancora Techs., Inc. v. Apple, Inc., 744 F.3d 732 (Fed. Cir. 2014)	6
Bancorp Services v. Sun Life Assur. Co. of Canada, 687 F.3d 1266 (Fed. Cir. 2012)	15
Crystal Semiconductor Corp. v. TriTech Microelectronics, 246 F.3d 1336 (Fed. Cir. 2001)	16
Enzo Biochem Inc. v. Applera Corp., 780 F.3d 1149 (Fed. Cir. 2015)	4-5
Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572 (Fed. Cir. 1996)	20
Exxon Chem. Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553 (Fed. Cir. 1995)	15
Hill-Rom Servs. v. Stryker Corp., 755 F.3d 1367 (Fed. Cir. 2014)	6, 18, 19, 27
Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898 (Fed. Cir. 2004)	4
Omega Eng'g v. Raytek Corp., 334 F.3d 1314 (Fed. Cir. 2003)	14
Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005)	1, 6, 7, 26
Power Mosfet Techs., L.L.C. v. Siemens AG, 378 F.3d 1396 (Fed. Cir. 2004)	27
Praxair, Inc. v. ATMI, Inc., 543 F.3d 1306 (Fed. Cir. 2008)	14-15

Regents of Univ. of Cal. V. Dakocytomation Cal., Inc.,
517 F.3d 1364 (Fed. Cir. 2008) ……..... 4

Starhome GmbH v. AT&T Mobility LLC,
743 F.3d 849 (Fed. Cir. 2014) ……... 4-5

Thorner v. Sony Computer Entm't Am., LLC,
669 F.3d 1362 (Fed. Cir. 2012) ……..... 21

ARGUMENT IN REPLY

I. An "emulsion" Is Not Limited To A Liquid In A Liquid.

A. An "emulsion" Is Not Universally Defined As A Liquid In A Liquid.

As a threshold matter, Dexcom is wrong in trying to justify the District Court's dictionary first approach to determine the plain and ordinary meaning of the claim terms. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1320-21 (Fed. Cir. 2005). While Arbmetrics agrees claim terms should generally be given their plain and ordinary meaning, that inquiry starts with the intrinsic evidence, not a multitude of dictionary definitions. *Id*. As this Court explained in *Phillips*, such "heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification." *Id*. at 1321.

As discussed *infra,* as well as in Arbmetrics' Opening Brief, the intrinsic evidence requires that the District Court's construction of "emulsion" be reversed. Setting this aside, contrary to Dexcom's assertion the term "emulsion" is not universally defined as a liquid in a liquid. As acknowledged by Dexcom, the New Encyclopedia Britannica indicates that the "term emulsion is often applied to mixed systems that should better be characterized as solutions, suspensions, or gels. For example, the so-called photographic emulsion is actually a gelatin gel in which tiny crystals (e.g., of silver bromide) are dispersed." Appx01810. In other words, the

plain and ordinary meaning of the term emulsion, as used by those of ordinary skill in the art, encompasses mixed systems that can include solids (e.g., crystals).

This meaning of "emulsion" is consistent with claim 1 of the '225 patent, which indicates that the claimed "emulsion" includes "a stabilized gel comprising crosslinked protein and particles of said oxygen dissolving substance." Appx00045 (claim 1). In other words, claim 1 of the '225 patent explicitly states that the claimed "emulsion" includes a stabilized gel. *Id*. Further, contrary to Dexcom's argument the New Encyclopedia Britannica does not indicate that it is error to refer to a solutions, suspension, or gels as an emulsion. Appx01810. Rather, it indicates that mixed systems, such as solutions, suspensions, or gels, are often referred to as emulsions, just as in claim 1 of the '225 patent. *Id.*; Appx00045 (claim 1).

Dexcom's argument that an "emulsion" is "universally defined as a liquid in a liquid" is also belied by Dexcom's own extrinsic evidence. For instance, several dictionary definitions used by Dexcom in the deposition of Arbmetrics' expert, Dr. Smith, recognize that an emulsion can include solid particles suspended in a gel, or describe an "emulsion" as a "suspension," in direct contravention to Dexcom's position. Appx02170-02171 (148:8-25, 151:6-24); Appx02171-02173 (152:22-153:6, 156:15-157:20); Appx02174-02175 (161:14-162:18, 164:2-8). In addition, Dexcom's extrinsic evidence explicitly states that an "emulsion" can include an

emulsifying agent, which can be a solid. Appx02979-02984, Appx03000-03006. Dexcom does not address any of these dictionaries or testimony in its brief.

In sum, the term "emulsion" is not universally defined as a liquid in a liquid. The District Court simply refused to acknowledge, let alone consider, the extrinsic evidence that contradicted its construction, which was clear error. The extrinsic evidence, when actually considered, demonstrates that an emulsion can include a solid.

B. The Intrinsic Evidence Does Not Require Limiting "emulsion" To Only Liquids.

The '225 patent claims contradict, rather than support, the District Court's construction of "emulsion." Claim 1 of the '225 patent explicitly states that the claimed "emulsion" includes an "oxygen dissolving substance." Appx00045 (claim 1). Claim 5 of the '225 patent explicitly states that the claimed "oxygen dissolving substance," which is part of the "emulsion" of claim 1, can be a solid. *Id* (claim 5). As a result, the '225 patent claims explicitly state that the claimed "emulsion" can include a solid and is not limited to only liquids. Dexcom's argument that the plain language of the claims does not really mean any solid, but rather solids dissolved in solution finds no support in the intrinsic evidence. For example, there is no language in the '225 patent claims or specification requiring that any solid component of the claimed "enzyme emulsion" be dissolved in solution. Tellingly, the primary

evidence relied on by Dexcom in support of its argument is extrinsic testimony from its expert. Appx02333-02335.[1]

Dexcom's reliance on *Regents of Univ. of Cal. v. Dakocytomation Cal., Inc.*, 517 F.3d 1364 (Fed. Cir. 2008) is inapposite. In *Dakocytomation*, this Court rejected the applicant's claim differentiation argument because "the prosecution history overcomes the presumption." *Id*. at 1375. In other words, in *Dakocytomation* this Court did not reject the patentee's claim differentiation argument based on the customary meaning of the term at issue. *Id*. Rather, this Court found that during prosecution of the patent-in-suit the patentee limited "the heterogenous mixture to unique sequences." *Id*. at 1373-1375. In the present case, there is no evidence that the patentee limited the claimed "emulsion" to only liquids. Rather, the evidence shows that the patentee intended for the claimed "emulsion" to be able to include solids or liquids. *See e.g.*, Appx00045 (claims 1, 5, 6); Appx00042 (8:56-59).[2]

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[1] The fact that portions of the '225 patent specification discusses limited examples of solids dissolving in liquids does not require that the emulsion of claim 1 be so limited. This Court has repeatedly held that courts may not import limitations from embodiments disclosed in the specification in order to limit or otherwise vary the meaning of the claim language. *See e.g., Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 905-06 (Fed. Cir. 2004). Further, when the patentee wanted to limit the claimed "oxygen dissolving substance" to liquids he stated as much. Appx00045 (claim 6 – "wherein the oxygen dissolving substance is a perfluorocarbon liquid").

[2] Similarly, Dexcom's reliance on *Starhome GmbH v. AT&T Mobility LLC,* 743 F.3d 849 (Fed. Cir. 2014) and *Enzo Biochem Inc. v. Applera Corp.*, 780 F.3d 1149 (Fed. Cir. 2015) is also misplaced. In *Starhome*, this Court rejected the appellant's claim differentiation argument, finding that "[t]he claims differ in scope, therefore, and the district court's construction neither imports limitations from one claim to another

Dexcom's contention that the presence of an "emulsion" and a "stabilized gel" in claim 1 of the '225 patent supports the District Court's construction is also incorrect. Specifically, Dexcom contends that claim 1 requires "an insolubilized 'gel' to be formed from the 'emulsion' *after* a cross-linker is added." Dexcom Br., p. 17. This argument ignores the plain language of the claim, which states that the "stabilized gel" is part of the "enzyme emulsion." Appx00045 (claim 1). Per Dexcom's admission, "[i]t is well-established that a gel … is a liquid dispersed in a solid." Dexcom Br., p. 17. In other words, claim 1 specifically states that the "emulsion" comprises a "stabilized gel," which by Dexcom's own admission is a liquid dispersed in a solid. *Id*.

Dexcom's assertion that "every embodiment of an emulsion described in the '225 Patent is a liquid in a liquid" is also false. The specification of the '225 patent explicitly states that the "emulsion" can include "**solid or liquid particles**." Appx00042 (8:56-59) (emphasis added). Dexcom's argument that this disclosure is

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nor renders any claims redundant." *Starhome*, 743 F.3d at 858. In other words, in *Starhome* the concerns underpinning the doctrine of claim differentiation were not present. In contrast, in the present case the District Court's construction is explicitly at odds with the plain language of claims 1 and 5 of the '225 patent. Further, in *Biochem* the patentee could not identify a single portion of the patent specification in support of its argument that the claim should be construed to allow for direct and indirect detection. *Biochem*, 780 F.3d at 1156-57. In contrast, in the present case Arbmetrics has identified specific intrinsic evidence where the patentee explicitly states that the claimed "emulsion" can include solids or liquids and is not limited to only liquids. Appx00045 (claims 1, 5, 6); Appx00042 (8:56-59).

meaningless and cannot alter the customary meaning of "emulsion" is incorrect. "Claim terms are generally given their plain and ordinary meanings to one of skill in the art when read in the context of the specification and prosecution history." *Hill-Rom Services, Inc. v. Stryker Corp.,* 755 F.3d 1367, 1371 (Fed. Cir. 2014). "The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Phillips,* 415 F.3d at 1316 (internal quotation marks omitted). Dexcom's argument that the '225 patent specification should be disregarded in lieu of extrinsic dictionaries is contrary to this Court's long-standing claim construction precedent. *Id*.

Dexcom's reliance on *Ancora Techs., Inc. v. Apple, Inc.,* 744 F.3d 732 (Fed. Cir. 2014) is also misplaced. In *Ancora*, this Court held that the terms at issue – "volatile memory" and "non-volatile memory" – "have so clear an ordinary meaning that a skilled artisan would not be looking for clarification in the specification." *Id*. at 738. In the present case, as discussed *supra* in Section I.A., "emulsion" is not universally defined as a liquid in a liquid. As such, one of ordinary skill would look to the patent specification and learn that the patentee intended that the claimed "emulsion" can include "solid or liquid particles." Appx00042 (8:56-59).

Finally, Dexcom's assertion that during prosecution of the '225 patent the applicant distinguished U.S. Patent No. 5,431,160 to Wilkins ("Wilkins") on

grounds that Wilkins did not disclose an emulsion because "Wilkins used a suspension with 'particles suspended in fluid'" is also incorrect. As explained in detail in Arbmetrics' Opening Brief, the applicant distinguished Wilkins based on the fact that the particles found in Wilkins, specifically particles of graphite, nylon, polyethylene, and polystyrene, are barely oxygen dissolving if at all, and therefore do not disclose the claimed "enzyme emulsion," which requires an oxygen dissolving substance. Appx03483; Appx02120-02121 (Smith Rebuttal Decl., at ¶¶ 26-28). There are no statements in the prosecution history that limit the claimed "emulsion" to liquids.[3]

It is well established that "the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips,* 415 F.3d at 1312. In the present case, the patent claims and specification explicitly state that the "emulsion" is not limited to liquids. As such, the District Court's construction must be reversed.

II. The District Court Erred in Its Construction of "oxygen dissolving substance."

Contrary to Dexcom's assertions, Arbmetrics' position is, and always has been, that the claimed "oxygen dissolving substance" is any substance that can

[3] Dexcom's assertion that Arbmetrics' expert disagreed with this position is simply incorrect and a misrepresentation of the evidence. Appx03210 (177:17-178:7). What Dr. Smith did testify to is that Wilkins failed to disclose the claimed oxygen dissolving substance and, therefore, the claimed emulsion, which includes the oxygen dissolving substance. *Id*.

dissolve oxygen, as long as its oxygen-dissolving properties (i.e., solubility or permeability) are greater than the materials disclaimed during prosecution of the '225 patent. Dexcom, on the other hand, advances the position that the disclaimer in the prosecution history and several key portions of the specification should be ignored in lieu of Dexcom's expert's opinion of what the "purpose of the invention" was.[4] Dexcom's arguments should be rejected and the District Court's construction must be reversed.

A. The Intrinsic Evidence Does Not Support The District Court's Construction.

Dexcom contends the '225 patent requires the claimed "oxygen dissolving substance" be defined in terms of its solubility as compared to water. In doing so, Dexcom advances a narrative that it is critical to the invention in the '225 patent that the "oxygen dissolving substance" be one "where oxygen is 'extremely soluble.'" Dexcom Br., p. 29 (Dkt. 22). Dexcom goes so far to state that "it is critical that the 'oxygen dissolving substance' provide oxygen solubility that is higher than that of water." *Id.* at 31 (citing only Dexcom's Expert Report (Appx02406-02408 at ¶¶ 172-174)). This narrative is a fiction created by Dexcom and its expert. Nowhere in the intrinsic record is there a statement, or even an insinuation, by the patentee

[4] Dexcom also contends that it is practicing the prior art, not the inventions claimed in the '225 patent. Dexcom Br., p. 5 (Dkt. 22). This is incorrect, completely unsubstantiated, and irrelevant to the claim construction issues before the Court.

that such a concept is "critical" to the invention. Tellingly, Dexcom relies heavily on extrinsic evidence, namely the testimony of its expert, to support this narrative. *See* Dexcom Br., at 29-42 (Dkt. 22) (citing Appx02406-02409 at ¶¶ 170-176, 189 consistently throughout). Dexcom's citations to a few sentences from the intrinsic evidence are insufficient to establish that this narrative controls. Moreover, this argument requires that the Court accept Dexcom's argument that "biological fluids" are "essentially water," which Dexcom admits is simply untrue. Dexcom Br., at 31, n.1 (admitting blood is a bodily fluid that is not "essentially water").

When Dexcom's extrinsic evidence is set aside, the '225 patent specification is only cited a few times in Dexcom's Brief. Those cited passages only mention oxygen solubility and water in passing, if at all. *See* Dexcom Br., at 30-37 (citing Appx00040 (3:33-45, 4:10-14), Appx00041 (5:23-25), Appx00042 (8:12-22), Appx00043 (10:28-32), Appx00045 (13:2-4)). As discussed by the District Court, only two of these excerpts even conceivably relate to the oxygen solubility of water – the citations to the '225 patent at 10:28-32 and 13:2-4. Appx00022. However, as noted in Arbmetrics' Opening Brief, these excerpts do not support limiting the term "oxygen dissolving substance" to substances with a higher oxygen solubility than water. Op. Br., at 24-26 (Dkt. 20). Dexcom made no effort to even rebut this point, instead pointing to focus on irrelevant extrinsic evidence alleging that "'the solubility of oxygen in water is often used as a convenient reference measurement'

by those of skill in the art." Dexcom Br., at 31-32 (citing expert testimony at Appx03378-03379 at ¶ 87). Dexcom's numerous attempts to supplant the intrinsic evidence (namely the patent specification) with extraneous extrinsic expert testimony must be rejected.

Dexcom also presents a portion of the prosecution history discussing Wilkins to argue that since the patentee used the term "preferentially soluble," the District Court's construction is correct. Dexcom Br., at 33 (citing Appx03482-03483). However, this portion of the prosecution history does not even support the notion that the solubility of the materials in the Wilkins reference (i.e., particles of graphite, polyethylene, polystyrene, or nylon) are being compared to water, as this was never stated by the patentee. *Id*. It could just as likely have been patentee's intent that oxygen is not preferentially soluble in comparison to any of the other materials found within the sensor, such as glucose or glucose oxidase.

Moreover, the patentee's statement was made only in the context of a "preferred" oxygen dissolving substance and was clearly not meant to limit the full breadth of the term "oxygen dissolving substance" to only those substances with oxygen solubility characteristics greater than water. *See* Appx03482 ("[t]he preferred oxygen dissolving substance is a perfluorocarbon although other organic substances (e.g. silicone oils) also show favorable properties. Oxygen is preferentially soluble in these materials […]").

In sum, there is nothing in the intrinsic evidence that warrants limiting the term "oxygen dissolving substance" to substances with a higher oxygen solubility than water. In contrast, the patentee's disclaiming statements in distinguishing the Wilkins reference in the prosecution history require that the term be construed to include substances having a higher oxygen solubility than particles of graphite, polyethylene, polystyrene, and nylon (i.e., the substances the patentee disclaimed as non-oxygen dissolving).

B. The District Court's Construction Incorrectly Focused On Solubility Only.

Another reason that the '225 patent never characterizes the solubility of the oxygen dissolving substance in relation to water as "critical" to the invention is because the specification is clear that the properties of an oxygen dissolving substance include the oxygen solubility and oxygen permeability of the substance. As discussed in Arbmetrics' Opening Brief, the specification of the '225 patent plainly evidences that the concept of an "oxygen dissolving substance" in the context of the '225 patent includes both oxygen "binding" and "permeable" materials. Op. Br. at 27-28 (Dkt. 20). The '225 patent specification explicitly states, "[t]he present invention, then, provides a greatly improved sensor by producing a cross-linked gel containing glucose oxidase or similar hydrogen peroxide-producing enzymes, **an emulsified oxygen binding/permeable material, such as a perfluorocarbon, a**

silicone oil, a fluorosilicone oil, an aliphatic oil or organic compound such as a steroid, to carry oxygen to the enzyme." *Id*. (emphasis added).

Even though this was specifically pointed out in Arbmetrics' Opening Brief, Dexcom failed to even address it in its response. Dexcom Br., at 41-42. Instead, Dexcom once again pointed to irrelevant extrinsic evidence alleging that "[i]t is not disputed that solubility and permeability are different properties to persons of ordinary skill." Dexcom Br., at 41 (citing expert testimony at Appx03224 (233:3-7); Appx02411, at ¶ 189). Dexcom's numerous attempts to supplant the intrinsic evidence with expert testimony must be rejected. Whether oxygen solubility and oxygen permeability are different properties is not the dispute. The correct construction of the term "oxygen dissolving substance" in the context of the '225 patent is one that accounts for both permeability and solubility due to the statements made in the patent's specification. Op. Br., at 26-28 (Dkt. 20). If the patentee, Dr. Leland Clark, the "father of the biosensor," wished to limit the "oxygen dissolving substance" to an "oxygen soluble substance" then he would have claimed it as such. Instead, Dr. Clark discussed the substance as having "oxygen dissolving" properties and specifically described those substances as including oxygen "permeable" substances. The District Court's construction must, therefore, be reversed.

C. The Extrinsic Evidence, Specifically Dexcom's Own Statements, Does Not Support The District Court's Construction.

Dexcom urges this Court to dispense with its *own statements* in its patent filings concerning the *identical* subject matter as the '225 patent, instead focusing the court on an alternative definition of "oxygen soluble" from that Dexcom patent. Dexcom Br., at 37-39. Dexcom cannot escape the fact that the Dexcom patent at issue states that "high oxygen solubility is defined as having higher oxygen solubility than at least one of a hydrocarbonaceous polymer and an oxyhydrocarbon polymer." Appx02020, Appx02602 (U.S. Patent No. 7,379,765 at 12:17-21). The claims of the Dexcom Provisional Patent Application to which this patent claims priority specifically sought to claim this concept. Appx03730; Appx02007. This Provisional Patent was filed in 2003, just a few years after the filing of the '225 patent. *Id.* This provides important independent extrinsic evidence that in the early 2000's, actors within the art of implantable glucose sensors (including Dexcom) viewed materials having at least a higher oxygen solubility characteristic than the types of polymer materials disclaimed in the prosecution of the '225 patent as having high oxygen solubility.

Setting this aside, Dexcom's primary argument concerning this point appears to be a procedural one. Dexcom Br., at 37-39 (Dkt. 22). At the District Court, Arbmetrics proposed a construction for "oxygen dissolving substance" to be "a substance having a higher oxygen solubility or higher oxygen permeability than at

least one of a hydrocarbonaceous polymer and an oxyhydrocarbon polymer." Appx00021, Appx01727-01731. The District Court rejected this construction because the terms "hydrocarbonaceous polymer" and "oxyhydrocarbon polymer" do not appear in the intrinsic record. Appx00022. Arbmetrics also proposed the construction it seeks before this Court: "a substance having a higher oxygen solubility or higher oxygen permeability than particles of graphite, polyethylene, polystyrene, and nylon." Appx01730, Appx03719, Appx03845. With these proposals, Arbmetrics was simply trying to capture the substances disclaimed during prosecution of the '225 patent.

Setting this aside, Arbmetrics' proposed construction for "oxygen dissolving substance" advanced in this appeal, which was also requested at the District Court, is congruent with the scope of the patentee's disclaimer. Appx01730, Appx03482-03483, Appx03719, Appx03845; *see Omega Eng'g v. Raytek Corp.*, 334 F.3d 1314, 1324-25 (Fed. Cir. 2003). It is well-established that when considering the meaning of a patent, the court has an independent obligation to construe the terms of a patent and need not accept the constructions proposed by either party. *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1323-24 (Fed. Cir. 2008). As such, the Federal Circuit is empowered to (a) adopt the claim construction proffered by Arbmetrics, (b) adopt the claim construction proffered by Dexcom and adopted by the District Court, or (c) adopt its own interpretation of the patent based on the record, even if the specific

interpretation wasn't argued by either party in the lower proceeding. *Id.* "[W]hen we determine on appeal, as a matter of law, that a trial judge has misinterpreted a patent claim, we independently construe the claim to determine its correct meaning, and then determine if the facts presented at trial can support the appealed judgment." *Exxon Chem. Patents, Inc. v. Lubrizol Corp*., 64 F.3d 1553, 1560 (Fed. Cir. 1995); *see also Bancorp Services v. Sun Life Assur. Co. of Canada*, 687 F. 3d 1266, 1274 (Fed. Cir. 2012).

The ultimate question here is whether the District Court's construction of "oxygen dissolving substance" is the correct one. The answer is no. Dexcom's concern regarding the "procedural history" of Arbmetrics' proposals is misplaced. Arbmetrics' proposed construction for "oxygen dissolving substance" is correct and should be adopted.

III. The Term "in contact with" Is Not Limited to Touching[5]

A. The Patent Claims Do Not Require That "in contact with" Be Limited to Touching

The '225 patent claims do not require that "in contact with" be limited to "touching." Claims 2 and 15 merely require that the enzyme emulsion be sandwiched between a semipermeable membrane and the electrode. Appx00045

[5] Contrary to Dexcom's assertion, Arbmetrics did not, and does not, agree that the District Court's construction of "in contact with" is case dispositive. *See* Dexcom Br., p. 9 (Dkt. 22); Appx00880.

(claim 2), Appx00046 (claim 15). The claim language does not foreclose Arbmetrics' construction. *Id.* Rather, Arbmetrics' construction affords the claim the full breadth of the claim language, because the "physical position" of these materials is defined by the "sandwiched" language of claim 15. Specifically, the claimed "enzyme emulsion" is "sandwiched between the membrane and the electrode," and Dexcom has provided no argument as to why this language fails to sufficiently describe the physical sequence or position of the claimed materials.[6] Again, there is no requirement that the materials of unasserted claim 15 physically "touch" because this interpretation would foreclose the application of intermediate layers, which is improper. *See Crystal Semiconductor Corp. v. TriTech Microelectronics*, 246 F.3d 1336, 1348 (Fed. Cir. 2001) (use of word "comprising" "creates presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements").

Rather, as discussed in Arbmetrics' Opening Brief, the '225 patent claims, and the District Court's own claim construction order, evidence that the term "in contact with" is broader than "touching." For example, claim 1 contains the terms "in contact with," which was erroneously construed to be limited to "touching," and "intimate contact," which was construed to mean "very close contact" – i.e., very

[6] Notably, claim 2 of the '225 patent, which depends from claim 1 and discusses the same sandwich relationship of claim 15, does not require that the enzyme emulsion be "in contact with" the membrane. Appx00045 (claim 2).

close touching if the District Court's construction is applied. As discussed in Arbmetrics' Opening Brief, these constructions are internally inconsistent because there is no such thing as very close touching; if things are touching they are touching.[7]

Dexcom attempts to justify this inconsistency by arguing that "in contact with" refers to a physical relationship and "intimate contact a "molecular relationship." This argument is a complete fabrication.[8] Both terms refer to a relationship between two things, one is simply a more intimate or close relationship than the other. The District Court simply overreached with its improperly narrow construction of "in contact with," which renders the closer relationship of "intimate contact" meaningless. As such, the District Court's construction must be reversed.

B. The Patent Specification Does Not Require That "in contact with" Be Limited to Touching

The '225 patent specification also does not support the District Court's construction. Dexcom has failed to identify any intrinsic evidence showing that the

[7] Contrary to Dexcom's argument, the proper way to address the District Court's erroneous construction of "in contact with" is not to address the District Court's construction of "intimate contact." Rather, the proper way to address this error is to reverse the District Court's construction of "in contact with."

[8] Notably, Dexcom never made its physical versus molecular relationship argument at the District Court. This is because there is absolutely no evidence that the patentee's use of the phrase "intimate contact" was intended to reference the molecular relationship between the claimed enzyme and oxygen dissolving substance.

patentee demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction with respect to "in contact with the electrode." Instead, Dexcom points to a few portions of the specification that generally describe an embodiment of the '225 patent, specifically Figure 2 and a few lines of specification text. *See* Dexcom Br., pp. 46-48 (Dkt. 22). The fact that Figure 2 may not explicitly show an intermediate layer or coating between the electrode and enzyme emulsion does not mean that the claims should be limited to such a configuration. *See e.g.*, *Hill-Rom Servs.*, 755 F.3d at 1371-72. Dexcom's few citations to the specification are similarly devoid of any clear expressions of manifest exclusion or restriction, as they simply discuss certain features of particular embodiments. *See e.g.*, Appx00041 (5:29-31). In sum, there is absolutely nothing in the intrinsic evidence that requires "in contact with" be limited to "touching."

To the contrary, as discussed in Arbmetrics' Opening Brief, the '225 patent specification indicates that "in contact with" is broader than, and not limited to, direct contact – i.e., touching. For instance, the '225 patent specification states: "Generally the device is not directly in contact with the circulatory system …." Appx00041 (6:62-67). In other words, the '225 patent acknowledges that "in contact with" can refer to direct or indirect contact and, with respect to the circulatory system, the device need not be "directly in contact." *Id*. Dexcom's argument that this excerpt supports the District Court's construction is taken out of context and

ignores the fact that the discussion is about direct contact, not any contact at all. In sum, nothing in the '225 patent mandates that "in contact with" be limited to "touching" and the District Court's construction must therefore be reversed.

C. The Extrinsic Evidence Does Not Require That "in contact with" Be Limited to Touching

The intrinsic evidence establishes that the District Court's construction is in error and must be reversed. As a result, reference to extrinsic evidence is not even required. Setting this aside, contrary to the District Court's finding and Dexcom's assertion there is not a universal customary meaning for the phrase "in contact with." Rather, a survey of the dictionary definitions of "contact," as opposed to the phrase "in contact," demonstrates that there are at least two applicable definitions of "contact," one that relates to touching and one that relates to communication. *See* Appx01821 ("the state or condition of communicating or meeting"); Appx01828 ("2. Interaction; communication"); Appx01835 ("connection, communication"); Appx03024 ("to communicate with"); Appx03029 ("Connection or interaction; communication"); Appx03033 ("get in touch or communication with").

This latter communication-oriented definition, which is present in the dictionaries relied on by both parties, is the correct definition in the context of the '225 patent. *See Hill-Rom Srvcs.,* 755 F.3d at 1371 (the plain and ordinary meaning of a claim term must be determined in the context of the intrinsic evidence). This is because communication of an analyte (or a surrogate analyte, such as hydrogen

peroxide) is required between the claimed enzyme emulsion and the conductive material (e.g., the "electrode") for the sensor to generate the desired electrochemical reaction and operate as intended. Appx00039-00040 (2:43-3:4). A person having ordinary skill in the art at the time of invention would have understood this electrochemical process in the context of the claimed sensor and that the proper definition of "in contact with" is based on communication, not touching. Appx01761-01763.

Dexcom's reliance on *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 93 F.3d 1572 (Fed. Cir. 1996) is also misplaced. *Ethicon* dealt with linear cutter stapler surgical instruments that are used to cut internal body tissue. *Id*. at 1574. In *Ethicon*, this Court acknowledged that the term "'connected to' could, in other contexts, be broadly construed," but that in the context of the claim at issue in *Ethicon* it must be read narrowly because otherwise the term would have no meaning. *Id*. at 1578. In contrast, in the present case adopting Arbmetrics' proposed construction for "in contact with" does not deprive the term of meaning.

Finally, Dr. Smith's testimony from other cases is not relevant and, even if found to be relevant, does not justify the District Court's erroneous construction that is at odds with the intrinsic evidence. Dexcom's argument attempts to further its false narrative that there exists some unassailable, singular definition of words outside of the patent disclosure that must be imported to the claims regardless of,

and in contravention to, the intrinsic evidence. Setting aside that this is the incorrect framework for claim construction, Dr. Smith testified that his prior testimony and the present case involved different patents and situations. Appx02148 (Smith Depo., at 57:2-13). As such, Dexcom's allegation that Dr. Smith solely relied on an "implicit redefinition" of the term in the '225 patent is incorrect.[9] Dr. Smith relied on the intrinsic evidence of the patent-in-suit as the basis of his opinions and has provided ample testimony as to why the term "in contact with" should be construed to mean "direct, indirect, or diffusional communication" when viewed in the context of the patent-in-suit.[10] *See* Appx01761-01763 (Smith Decl., at ¶¶ 51-60); Appx02125-02127 (Smith Rebuttal Decl., at ¶¶ 40-46); Appx02138, Appx02140-02141 (Smith Depo., at 19:5-20:11, 28:8-32:24).

[9] Dexcom's reliance on *Thorner* is also misplaced and further exemplifies why Dexcom's position is incorrect. *Thorner* states, "]t]he patentee is free to choose a broad term and expect to obtain the full scope of its plain and ordinary meaning ***unless the patentee explicitly redefines the term*** […]". *Thorner v. Sony Computer Entm't Am., LLC*, 669 F.3d 1362, 1367 (Fed. Cir. 2012) (emphasis added). In this case, Arbmetrics' position is not that there was an implicit redefinition of the term in the '225 patent that limits its scope, as Arbmetrics' position attempts to reflect the full scope of the claim language. Dexcom, on the other hand, is arguing for constructions that rob the claim terms of their full scope of meaning while failing to show lexicography or disclaimer. This is improper. *Id*.

[10] Additionally, Dr. Smith testified that the unrelated patent also "redefined" the term at issue, as the construction of both terms were context-specific, following the appropriate framework for claim construction. Appx02148-02149 (Smith Depo., at 60:3-61:20).

In sum, the extrinsic evidence does not require that "in contact with" be limited to touching. The District Court's construction in this regard was in error and must be reversed.

IV. The District Court Erred in Its Construction of "electrode."[11]

Dexcom's contention that "the only issue regarding this term is whether an electrode and a membrane should be defined as separate elements, or merged into a single component" is wrong. Dexcom Br., pp. 51-52 (Dkt. 22). This attempt to incorrectly reframe the issue must be rejected. Arbmetrics has never argued that the terms should be "merged into a single component." Arbmetrics merely takes issue with the District Court's finding that the claimed "electrode" cannot include a membrane or other coating.

Once again, contrary to contrary to the District Court's construction, and Dexcom's assertion, nothing in the intrinsic or extrinsic evidence prohibits the claimed "electrode" from including a membrane or other coating. Even though the District Court agreed that "there is nothing in the prosecution history ..., the specification, or the claims that precludes the presence of a membrane or coating on the claim [*sic*] electrode," the District Court erroneously held that the claimed

[11] Contrary to Dexcom's assertion, Arbmetrics did not, and does not, agree that the District Court's construction of "electrode" is case dispositive. *See* Dexcom Br., p. 9 (Dkt. 22); Appx00880.

"electrode" cannot include a membrane or other coating. This construction must be reversed.

A. The Patent Claims Do Not Prohibit The "electrode" From Including A Membrane

The '225 patent claims confirm that the claimed "electrode" can include a membrane. For example, as Dexcom acknowledges claims 2 and 15 both claim a "semipermeable membrane covering the electrode." Appx00045 (claim 2); Appx00046 (claim 15). As such, the "electrode" of claim 1 can certainly include a membrane or other coating.

Dexcom attempts to conflate the issue by arguing that "electrode" and "membrane" must be separate elements. Even if it is assumed arguendo that these must be separate elements, that does not mean the membrane cannot be part of the electrode, which is the actual issue before this Court. Paint is a coating on a car, but no one is going to argue that it is not part of the car.

The issue before this Court is simply can the claimed electrode include a membrane or other coating. Nothing in the '225 patent prohibits this. As such, the District Court's finding that the claimed electrode cannot include a membrane or other coating must be reversed.

B. The Patent Specification Does Not Prohibit The "electrode" From Including A Membrane

Similarly, nothing in the '225 patent specification or prosecution history prohibits the claimed "electrode" from having a membrane or other coating. The District Court agreed that "there is nothing in the prosecution history ..., the specification, or the claims that precludes the presence of a membrane or coating on the claim [*sic*] electrode." Appx00025. Rather, same as with the '225 patent claims, the '225 patent specification confirms that the electrode can have a membrane or coating. *See e.g.,* Appx00043 (9:55-60); Appx00039 (2:35-38).[12]

Dexcom seems to agree, indicating that there is nothing in the District Court's construction that excludes an electrode with a membrane. Dexcom Br., p. 55. This is because there is absolutely no support in the intrinsic evidence for the District Court's implicit finding that the claimed "electrode" cannot have a membrane or coating. As such, the District Court's finding in this regard must be reversed.

[12] The same is also true for Dr. Clark's prior patents, such as U.S. Patent No. 4,680,268 ("the '268 patent"), which was incorporated by reference in the '225 patent. Appx00040 (4:36-39). The '268 patent states: "[a]lthough not shown in the Figs., it should be appreciated to those in the art that the sensors of the present invention may include a 'third' membrane placed over anode 8 to separate enzyme 7 from anode 8." Appx01868 (7:1-4).

V. The District Court Erred in Its Construction of "hydrocarbon oils or solids."

The District Court's construction, and Dexcom's argument, that hydrocarbons can only include hydrogen and carbon, and nothing more, is contrary to the intrinsic and extrinsic evidence.

First, the patent specification specifically states that "hydrocarbon oils or solids" includes oils or solids that include a hydrogen and carbon side chain – i.e., not composed of only hydrogen and carbon. Appx00042 (8:12-16). The '225 patent specification states:

> Besides perfluorocarbons hydrocarbon drugs (e.g., cortical steroids) silicones, silanes, cyclic silanes, siloxanes, fluorinated silicones and other similar organo-silicon compounds are excellent oxygen solvents and are useful in the present invention.

Id. In other words, the '225 patent specification specifically states that "hydrocarbons" may include "hydrocarbon drugs (e.g., cortical steroids)" – i.e., compounds that are not composed of only hydrogen and carbon. *Id.* For example, cortical steroids, which the '225 patent says are "hydrocarbons," include cortisone which has the formula $C_{21}H_{28}O_5$, with five oxygen atoms included. Appx01777 (Smith Decl., at ¶ 104). This compound is not composed of only carbon and hydrogen, but instead includes a chemical group or side chain composed of hydrogen and carbon only, which is in line with how a person of ordinary skill in the art would have understood this term at the time of invention, as described by Dr. Smith.

Appx01776-01778. The District Court simply ignored this disclosure, instead adopting Dexcom's dictionary-based construction that is contrary to the intrinsic evidence.

Notably, despite Dexcom's urging the District Court did not find that the above passage contains a typographical error. Appx00025-00026. This is because it does not. The passage specifically says, "hydrocarbon drugs (e.g., cortical steroids)," which, contrary to Dexcom's argument, makes sense. Appx00042 (8:12-16).[13] In addition, the District Court did not dispute that the '225 patent specification explicitly identifies as "hydrocarbons" compounds with more than just hydrogen and carbon – e.g., cortical steroids. The District Court simply erroneously ignored the intrinsic evidence in favor of extrinsic dictionary definitions. *See Phillips*, 415 F.3d at 1320-21 ("heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification").

Second, the District Court's, and Dexcom's, position that Arbmetrics' proposed construction for "hydrocarbon oils and solids" would render the additional chemical classes in claim 5 redundant is incorrect. Arbmetrics' proposed

[13] Even if a comma may be missing after perfluorocarbons this is irrelevant because the portion of the passage relied on by Arbmetrics, and which directly contradicts the District Court's construction, is "hydrocarbon drugs (e.g., cortical steroids)," which clearly identifies compounds with more than just hydrogen and carbon as hydrocarbons. Appx00042 (8:12-16).

construction does not necessarily include all oils and steroids identified in claim 5. Further, the fact that there may be some overlap between the chemical classes identified in claim 5 is perfectly acceptable and does not mandate that the phrase "hydrocarbon oils and solids" be narrowly construed in a manner contrary to the '225 patent specification and the full breadth of its plain and ordinary meaning absent lexicography or disavowal of claim scope. *See Hill Rom Srvcs.,* 755 F.3d at 1371-72.[14]

Finally, the extrinsic evidence also supports Arbmetrics' proposed construction. As acknowledged by Dexcom, one widely used dictionary in the field of biochemistry includes within the definition of "hydrocarbon" compounds that have "a chemical group or side chain composed of hydrogen and carbon only." Appx01841-01850. In other words, to be a hydrocarbon a compound does not have to be composed exclusively of hydrogen and carbon as the District Court erroneously found. Rather, a compound with "a chemical group or side chain composed of

[14] Dexcom's reliance on *Power Mosfet Techs., L.L.C. v. Siemens AG,* 378 F.3d 1396 (Fed. Cir. 2004) does not change this result. Dexcom Br., p. 62 (Dkt 72). In *Power Mosfet*, this Court recognized that "while interpretations that render some portion of the claim language superfluous are disfavored, where neither the plain meaning nor the patent itself commands a difference in scope between two terms, they may be construed identically." *Power Mosfet*, 378 F.3d at 1410. In the present case, Arbmetrics' proposed construction for "hydrocarbon oils and solids" does not render the additional chemical classes identified in claim 5 superfluous. Further, the plain meaning of the term and the '225 patent do not command complete difference in scope between the chemical classes identified in claim 5.

hydrogen and carbon only" can also be a hydrocarbon, such as certain cortical steroids as identified in the '225 patent specification.

In sum, the District Court's construction of "hydrocarbon oils and solids" improperly limits the term to compounds with only hydrogen and carbon, which is contrary to the intrinsic and extrinsic evidence and must be reversed. Arbmetrics' proposed construction, which is consistent with the evidence, should be adopted.

CONCLUSION

For the foregoing reasons, Appellant respectfully requests that this Court reverse the District Court's claim construction findings discussed herein, vacate the District Court's final judgment, and remand this case for further proceedings consistent with this Court's mandate.

Dated: August 28, 2020

/s/ *Timothy E. Grochocinski*

Counsel for Plaintiff-Appellant
Arbmetrics, LLC

FORM 19. Certificate of Compliance with Type-Volume Limitations **Form 19**
July 2020

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATIONS

Case Number: 2020-1510

Short Case Caption: Arbmetrics, LLC v. Dexcom Inc.

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