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CLERK OF DISTRICT COURT
WESTERN DISTRICT OF TEXAS
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IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

ADVANCED ELECTROLYTE §
TECHNOLOGIES LLC AND §
UBE INDUSTRIES, LTD., §
§
PLAINTIFFS, §
§
V. §
§
SAMSUNG SDI CO., LTD, §
SAMSUNG SDI AMERICA, INC., §
SAMSUNG ELECTRONICS CO., LTD §
AND SAMSUNG ELECTRONICS §
AMERICA, INC., §
DEFENDANTS. §

CAUSE NO. A:17-CV-0030-LY

**MEMORANDUM OPINION AND ORDER REGARDING
CLAIMS CONSTRUCTION**

Before the court are the parties' Joint Claim Construction Statement filed November 28, 2017 (Clerk's Document No. 54); Plaintiffs Advanced Electrolyte Technologies LLC ("Advanced Electrolyte") and UBE Industries, Ltd.'s ("UBE") and Defendants Samsung SDI Co., Ltd., Samsung SDI America, Inc., Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc.'s (collectively "Samsung") Opening Claims Construction Briefs filed January 4, 2018 (Clerk's Document Nos. 55 & 56), and Advanced Electrolyte and UBE and Samsung's Reply Claim Construction Briefs filed January 18, 2018 (Clerk's Document Nos. 58 & 59), Samsung's Notice of Supplemental Authority in Support of Opening and Reply Claim Construction Briefs filed February 8, 2018 (Clerk's Document No. 63), and Samsung's Notice of the Patent Trial and Appeal Board's Institution Decisions on the *Inter Partes* Review Petitions Challenging the '809 and '001 Patents filed March 26, 2018 (Clerk's Document No. 68) ("Samsung's Notice").

The court held a claims-construction hearing on February 9, 2018. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996). At issue are claim terms in United States Patent No. 6,033,809, titled, “Lithium Secondary Battery and Electrolyte Thereof,” (“‘809 patent”). Also at issue are claim terms in United States Patent Nos., 6,927,001, (“‘001 patent”) and 9,742,033, (“‘033 patent”), both titled “Non-Aqueous Electrolytic Solution and Lithium Battery.” Additionally, with regard to the ‘809 patent, the court considered reexamination certificate No. US 6,033,809 C1, which canceled some claims, confirmed the patentability of some claims, and added new claims. The court refers to the three patents collectively as the “asserted patents.” The court having considered the asserted patents, and their prosecution histories, the parties’ briefing, the applicable law, and arguments of counsel, the court renders its order with regard to claims construction.

I. Introduction

A common issue that consumers experience with their electronic devices, such as phones, tablets, and toys, is that with use, over time, the batteries that power such devices, often called secondary, or rechargeable, batteries, hold less of a charge. This issue comes about because the energy-storage capacity of the secondary batteries, such as a secondary lithium-ion battery, degrades after each successive discharge-recharge cycle. This loss is cumulative. After a number of discharge-recharge cycles, the capacity of a lithium-ion battery could be 30% to 50% less than when the battery was new. This issue leads the consumer to either make do with an impaired device—one that must frequently be connected to a charger—or bear the expense of replacing the battery. Battery life is, therefore, an important sales-and-marketing issue for producers of electronic devices that use the battery products accused of infringement in this action.

UBE is the owner and assignee of the asserted patents and Advanced Electrolyte is the exclusive licensee of all right, title, and interest in and under the asserted patents. Samsung argues that the asserted patents fail to provide adequate guidance for determining what is within or outside the scope of the claims.

II. Legal Principles of Claim Construction

Determining infringement is a two-step process. *See Markman*, 52 F.3d at 976 (“[There are] two elements of a simple patent case, construing the patent and determining whether infringement occurred”). First, the meaning and scope of the relevant claims must be ascertained. *Id.* Second, the properly construed claims must be compared to the accused device. *Id.* Step one, claim construction, is the current issue before the court.

The court construes patent claims without the aid of a jury. *See Markman* 52 F.3d at 979. The “words of a claim ‘are generally given their ordinary and customary meaning.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*) (quoting *Vitronics Corp v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). The 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. *Id.* at 1313. The person of ordinary skill in the art is deemed to have read the claim term in the context of the entire patent. *Id.* Therefore, to ascertain the meaning of claims, courts must look to the claims, the specification, and the patent’s prosecution history. *Id.* at 1314–17; *Markman*, 52 F.3d at 979.

Claim language guides the court’s construction of claim terms. *Phillips*, 415 F.3d at 1314. “[T]he context in which a term is used in the asserted claim can be highly instructive.” *Id.* Other claims, asserted and unasserted, can provide additional instruction because “terms are normally used

consistently throughout the patent.” *Id.* Differences among claims, such as additional limitations in dependent claims, can provide further guidance. *Id.*

Claims must also be read “in view of the specification, of which they are a part.” *Markman*, 52 F.3d at 979. 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.” *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002) (internal citations omitted). In the specification, a patentee may define a term to have a meaning that differs from the meaning that the term would otherwise possess. *Phillips*, 415 F.3d at 1316. In such cases, the patentee’s lexicography governs. *Id.* The specification may also reveal a patentee’s intent to disclaim or disavow the claim’s scope. *Id.* Such intentions are dispositive for claim construction. *Id.* Although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiment. *Electro Med. Sys., S.A. v. Cooper Life Scis., Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

The prosecution history is another tool to supply the proper context for claim construction because it demonstrates how the inventor understood the invention. *Phillips*, 415 F.3d at 1317. A patentee may also serve as his own lexicographer and define a disputed term in prosecuting a patent. *Home Diagnostics Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004). Similarly, distinguishing the claimed invention over the prior art during prosecution indicates what the claims do not cover. *Spectrum Int’l v. Sterilite Corp.*, 164 F.3d 1372, 1378–79 (Fed. Cir. 1988). The doctrine of prosecution disclaimer precludes patentees from recapturing specific meanings that were previously disclaimed during prosecution. *Omega Eng’g Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323

(Fed. Cir. 2003). Disclaimers of claim scope must be clear and unambiguous. *Middleton Inc. v. 3M Co.*, 311 F.3d 1384, 1388 (Fed. Cir. 2002).

Although, “less significant than the intrinsic record in determining the legally operative meaning of claim language,” the court may rely on extrinsic evidence to “shed useful light on the relevant art.” *Phillips*, 415 F.3d at 1317 (quotation omitted). Technical dictionaries and treatises may help the court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but such sources may also provide overly broad definitions or may not be indicative of how terms are used in the patent. *Id.* at 1318. Similarly, expert testimony may aid the court in determining the particular meaning of a term in the pertinent field, but “conclusory, unsupported assertions by experts as to the definition of a claim term are not useful.” *Id.* Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.* Extrinsic evidence may be useful when considered in the context of the intrinsic evidence, *Id.* at 1319, but it cannot “alter a claim construction dictated by a proper analysis of the intrinsic evidence.” *On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1139 (Fed. Cir. 2004).

Indefiniteness

A claim is indefinite if it does not reasonably inform a person of ordinary skill in the art of the claim scope. *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1383–84 (Fed. Cir. 2005). A patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S.Ct. 2120, 2124 (2014). Even if a claim term’s definition can be reduced to words or the patentee can articulate a

definition supported by the specification, the claim is still indefinite if a person of ordinary skill in the art cannot translate the definition into meaningfully precise claim scope. *Haliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1251 (Fed. Cir. 2008).

III. Discussion

A. Person of ordinary skill in the art

With regard to each of the asserted patents, the parties agree that a person of ordinary skill in the art is a person with working knowledge of lithium secondary batteries and electrolytes for lithium secondary batteries, in addition to an understanding of basic chemistry, or chemical engineering. Such knowledge and understanding would be acquired from a bachelor's degree in chemistry, physics, or electrical or chemical engineering. In addition, a person skilled in the art would have at least three years of practical experience working in the field of lithium-ion batteries and electrolyte technology, or a closely related field.

B. Disputed terms

Neither Advanced Electrolyte nor UBE has identified any term, phrase, or clause that requires construction by the court. Further, they believe an ordinary person skilled in the art would have no difficulty understanding any of the terms, phrases, or clauses Samsung argues require construction. The parties dispute the construction of five terms. The following table summarizes the parties' positions regarding constructions of the disputed terms.

<u>Claim Term or Phrase</u>	<u>Advanced Electrolyte's Proposed Construction</u>	<u>Samsung's Proposed Construction</u>
1. "main components" (‘809 patent, Claim 1)	Plain and ordinary meaning. Not indefinite.	Indefinite under 35 U.S.C. § 112, ¶ 2
2. "0.1 to 4% by weight, based upon the total weight of the non-aqueous solvent, of a sultone derivative" (‘809 patent, Claims 1 & 9)	Plain and ordinary meaning. Not indefinite.	Indefinite under 35 U.S.C. § 112, ¶ 2
3. "anode is composed of a material containing graphite" (‘809 patent, Claim 1) "anode composed of a material containing graphite" (‘809 patent, Claim 9)	"composed of" – plain and ordinary meaning as an open transition phrase.	"anode consisting of a graphite-based substance"
4. "both of said two organic compounds have a reduction potential higher than reduction potentials of the cyclic and chain carbonates" (‘001 patent, Claims 1 & 9)	Plain and ordinary meaning. Not indefinite.	Indefinite under 35 U.S.C. § 112, ¶ 1; ¶ 2
5. "30 to 50 volume percent of a cyclic carbonate, based on a total volume of the non- aqueous solvent" (‘033 patent, Claim 1)	Plain and ordinary meaning. Not indefinite.	Indefinite under 35 U.S.C. § 112, ¶ 2

1. "main components"

Samsung contends that "main components," as used in the ‘809 patent, Claim 1, is an indefinite term because it is subject to multiple, equally reasonable, interpretations, and the intrinsic

record provides no guidance regarding which meaning applies. Claim 1 of the '809 patent provides, "the non-aqueous solvent contains, as main components, a cyclic carbonate and a linear carbonate and 0.1 to 4% by weight, based upon the total weight of the non-aqueous solvent, of a sultone derivative having" Advanced Electrolyte and UBE respond that the term should be construed to have its plain and ordinary meaning because "main components" is a typical descriptor in lithium-battery arts.

Issue is joined as to the meaning of "main" as an adjective for "components." The parties agree that components refers generally to the chemical compounds present in the non-aqueous solvent. Samsung bears the burden of showing by clear-and-convincing evidence that "main components" is an indefinite term as used in Claim 1. *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1377 (Fed. Cir. 2015).

Included with Samsung's Notice, filed March 26, 2018, is the Patent Trial and Appeal Board's ("PTAB") decision to deny institution of *inter partes* review with regard to the '809 patent. See *Samsung SDI Co. Ltd. v. UBE Indus.*, No. IPR2017-02115 (P.T.A.B. March 12, 2018). By the decision, the PTAB, *inter alia*, construed "main components" as including not only a cyclic carbonate and linear carbonate, but also a sultone derivative:

The '809 patent teaches that these problems are solved by including as "main components" of the non-aqueous solvent in the lithium secondary battery a cyclic carbonate, a linear carbonate, and a sultone derivative that has the following general formula (I):

Id. at 3-4. The PTAB did not reach the issue of indefiniteness, as it declined to institute an IPR proceeding based on other grounds. *Id.* at 20-21.

Decisions regarding requests for reexamination by the PTAB often assist a court with claims construction. *See Virtual Agility Inc. v. Salesforce.com, Inc.*, 759 F.3d 1307, 1314 (Fed. Cir. 2014). Despite ultimately denying Samsung's request for an IPR proceeding, the PTAB order included a construction for the disputed term "main components." This court's claim construction is informed and aided by the additional evidence of the PTAB's construction. *See e.g., e-Watch, Inc. v. ACTi Corp.*, 2013 WL 6334372, at *7 (W.D. Tex. Aug. 9, 2013) ([PTAB] decision becomes part of patent's intrinsic record).

Samsung argues that Advanced Electrolyte and UBE ignore the fact that the patentee failed to indicate which of several meanings applies to the word "main." Should "main" be interpreted as meaning chief, principal, leading, or most important? And, even if as argued by Advanced Electrolyte and UBE, "main" means chief in size, the scope of the claim remains unclear, as lacking is an objective boundary for the degree term, main. Samsung contends that reasonable minds of those skilled in the art can differ as to which meaning applies, and therefore the term is indefinite.

In support of its argument Samsung refers the court to the Federal Circuit's analysis of the term "minimal" in *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1363-64 (Fed. Cir. 2018). The *Berkheimer* court found no clear error in the district court's conclusion that the term "minimal redundancy" lacked an objective boundary, as missing from the patent was an indication to a person skilled in the art as to how much redundancy was minimal. *Id.* at 1364. The *Berkheimer* court observed however, that although in light of the evidence presented, minimal was indefinite, not all terms of degree in all patents are necessarily indefinite. *Id.*

To the extent Samsung argues that a person skilled in the art cannot determine how the '809 patent intended to measure solvent amounts, whether by weight or volume, in the patent, weight

ratios, from which weight percentage is directly calculable, are the default form of measuring amounts of solvents as in accordance with standards in the art of lithium batteries. Here, all of the examples reflected in the '809 patent use weight ratios or percentages and the claims of the '809 patent use exclusively weight percentages.

In reviewing Advanced Electrolyte and UBE's citations to the patent, the prior art in the prosecution history, the testimony of Brett Lucht, UBE's expert, and the PTAB's decision dated March 12, 2018, all show that the meaning of "main components" is that the amount of linear and cyclic carbonates together with a sultone derivative weighing within a percentage range, provides adequate certainty to one skilled in the art about what are the main components of the non-aqueous solvent. The court concludes that Samsung has failed to show by clear-and-convincing evidence that "main components" is an indefinite term to someone ordinarily skilled in the art of lithium-ion batteries.

2. "0.1 to 4% by weight, based upon the total weight of the non-aqueous solvent, of a sultone derivative"

Samsung contends that this phrase as used in the '809 patent, Claims 1 and 9 is indefinite because it fails to inform with reasonable certainty someone with ordinary skill in the art which claimed components are included in the non-aqueous solvent. Samsung contends that it is unclear whether the additive sultone derivative is a solvent or a solute, and whether it is to be counted as part of the total weight of the non-aqueous electrolyte solution. Advanced Electrolyte and UBE disagree that this portion is indefinite, and contend that the plain language, in light of the specification, points to the meaning the words convey—the claimed amount of a sultone derivative is 0.1 to 4% by weight based on the total weight of the non-aqueous solvent.

According to Lucht, primary solvents and additive solvents are all fundamentally solvents in the lithium-ion battery arts because both primary and additive solvents dissolve lithium salts. The '809 patent treats the primary solvents—cyclic carbonates and linear carbonates—and additive solvents—the sultone derivative—both as parts of the total weight of the non-aqueous solvent. Lacking is any intrinsic evidence that contradicts this position.

The court concludes that Samsung has failed to show by clear-and-convincing evidence that the phrase “0.1 to 4% by weight, based upon the total weight of the non-aqueous solvent, of a sultone derivative” is indefinite.

3. “anode is composed of a material containing graphite”

(‘809 patent, Claim 1)

“anode composed of a material containing graphite”

(‘809 patent, Claim 9)

a. **“composed of”** or proposed **“consisting of”**

Samsung argues that “composed of” as used here is a closed term, and the more appropriate closed term the court should adopt is “consisting of.” Advanced Electrolyte and UBE respond that there is no presumption that “composed of” indicates a closed group, and the intrinsic record reflects that it should be afforded an open construction.

The ‘809 patent explains the various substances an anode may have, including “carbonaceous materials having a graphite type crystal structure” such as “pyro[ly]tic carbons, cokes, . . . natural graphite, artificial graphite . . . [and] carbon fibers.” ‘809 patent, Col. 3:55-67. The powdered carbonaceous materials are mixed with binders and solvents. *Id.* at Col. 4:35-41. That mixture is then “coated on a copper foil, followed by drying and pressing to prepare an anode.” *Id.* at Col. 4:39-41. Advanced Electrolyte and UBE argue that this indicates that the material for an anode is made

up of many different substances in addition to graphite, and therefore, the use of “composed of” should be considered an open term. The court agrees, and the term “composed of” will be afforded its plain and ordinary meaning in the context of the specification.

b. **“containing”** or proposed **“consisting”**

During the claims-construction hearing, the parties agreed that “containing” is the same as “comprising,” both of which are broad, open terms, and neither indicates any exclusion of other elements. *See Mars v. H.J. Heinz Co.*, 377 F.3d 1369, 1375 (Fed. Cir. 2004) (“comprising” and “containing” are open-ended terms). Further, the parties agreed that containing and comprising are different from “consisting,” which is a closed term. As related to the issue here, the parties agree that the “material” referred to in the ‘809 patent, Claims 1 and 9 need not only *consist* of a single type of graphite, but may include a combination of graphites. Thus, the material may be solely natural graphite, solely artificial graphite, or some some combination of both. The court declines to substitute “consisting” for “containing” as used in the ‘809 Patent, Claims 1 and 9.

c. **“a material containing graphite”** or proposed **“anode containing a graphite-based substance”**

Samsung proposes that the court reword the phrase in the ‘809 patent, Claims 1 and 9, “a material containing graphite” to “anode containing a graphite-based substance.” The court finds no basis in the claim language, specification, or prosecution history to rewrite this plain and easily understood claim language. The court concludes that each of the words in the phrase, “a material containing graphite”—alone and in combination—have an easily understood meaning.

4. “both of said two organic compounds have a reduction potential higher than reduction potentials of the cyclic and chain carbonates”
(‘001 patent, Claims 1 & 9)

Samsung argues that this phrase is indefinite as it “is used by the patent in an undefined manner and contrary to its generally understood meaning in the art.” Samsung contends that what is missing from the patent is a proper test or method to measure and determine reduction potential, which generally means the voltage at which a compound is electrochemically reduced, that is, the voltage at which a chemical decomposes.

A chemical with a higher reduction potential will decompose before a chemical with a lower reduction potential. Additives such as the organic chemicals vinylene carbonate (VC) and 1,3 propanesultone (PS), have higher reduction potentials than lithium metal or other chain carbonates. Thus, the organic additives—VC or PS—will decompose before other chain or cyclic solvents. When the organic additives decompose, they cover the surface of the negative electrode with an inactive material—a passivation layer. That inactive material or passivation layer, stops the further decomposition of the other solvents, the practical result being a slower loss of battery discharge capacity over time.

Samsung posits that what is absent from the ‘001 patent are: (1) a proper method to determine the reduction potential for the “said two organic compounds;” (2) a method to determine the reduction potential for the cyclic and chain carbonate compounds; and finally, (3) a method to compare the two measures against each other, such that what is revealed is that the reduction potential for the organic compounds will reflect a higher reduction potential than the cyclic and chain carbonate compounds. Samsung advocates for a “peak method” of determining reduction potential, contending that is the proper method of determining reduction potential.

Advanced Electrolyte and UBE respond that the plain language in light of the '001 patent's specification points directly to the meaning the words convey, and the clause is not indefinite. And, more importantly, they argue that the '001 patent sets forth a proper method or test to determine reduction potential.

Advanced Electrolyte and UBE argue that there are two commonly accepted methods to measure reduction potential in the context of lithium-ion batteries. One method is by decreasing voltage at a fixed rate, for example, 1mV per second, and measuring the resulting current. This method, argues Advanced Electrolyte and UBE is described in the '001 patent. Col.4: 61-65. Alternatively, another method is to apply a constant current to the compound, and the rate of change of the voltage over time is measured. In whichever method is used to determine reduction potential, the test creator is expected only to explain the method and identify the necessary parameters. Advanced Electrolyte and UBE contend that the '001 patent discloses all the necessary parameters to perform a reduction-potential test without any undue experimentation, and the description in the '001 patent is sufficient for one of skill in the art to reproduce the test.

Advanced Electrolyte and UBE defend the choice of their tests for determining reduction potential because their methods make the arbitrariness of measuring go away. With a fixed value, when the voltage hits the set value, one knows what the voltage is, and that provides the necessary certainty in testing reduction potential.

The '001 patent discloses all the necessary parameters to perform a reduction-potential test without any undue experimentation. The court concludes that Samsung has failed to show by clear-and-convincing evidence that this phrase is indefinite to someone ordinarily skilled in the art of lithium-ion batteries.

5. “30 to 50 volume percent of a cyclic carbonate, based on a total volume of the non-aqueous solvent”

(‘033 patent, Claim 1)

The phrase appears in the following context in Claim 1:

1. A non-aqueous electrolytic solution, comprising:
a non-aqueous solvent comprising from 30 to 50 volume percent of
a cyclic carbonate, based on a total volume of the non-aqueous
solvent;

Samsung contends this phrase is indefinite regarding the total-volume calculation of the non-aqueous solvent for essentially the same reasons Samsung urged with respect to the challenged phrase in the ‘809 patent regarding the weight calculation of the non-aqueous solvent, “0.1 to 4% by weight, based upon the total weight of the non-aqueous solvent, of a sultone derivative.” Here, Samsung argues that the ‘033 patent provides conflicting guidance about what components are included in calculating the “total volume of the non-aqueous solvent.” Samsung contends that no one can know whether the nitrile or sultone additive solvents, the adiponitrile and the S=O group-containing compound, which sometimes act as solvents, are to be included in the total-volume calculation. Samsung contends that one ordinarily skilled in the art would not know which compounds to include in the calculation of the proportion of cyclic carbonate in the non-aqueous electrolyte solution to determine whether the cyclic carbonate is present in an amount of “30 to 50 volume percent of a cyclic carbonate, based on a total volume of the non-aqueous solvent.”

Advanced Electrolyte and UBE respond that in light of the specification, which provides several illustrations, the plain language is all that is necessary for one ordinarily skilled in the art to be certain of the claim. Advanced Electrolyte and UBE assert that the ‘033 patent and file history expressly exclude the additive solvents, such as the adiponitrile and the S=O group-containing

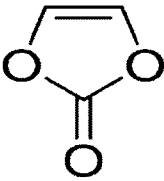
compound, from the calculation of the claimed volume of the non-aqueous solvent. Advanced Electrolyte and UBE argue that Samsung erroneously relies on one sentence in the '033 patent, which when considered in the context of primary and additive solvents, and weighed with the context of the entire specification, in no way rises to clear-and-convincing evidence that the term is invalid. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (“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.”).

The '033 patent's Example A-1 excludes adiponitrile from the volume measurements and the S=O group-containing compound is excluded from the volume measurements in Example C-1. The Summary of the Invention and Abstract exclude adiponitrile and the S=O group-containing compound from the non-aqueous solvent. Additionally, the portion of the specification that lists various solvents included for “[t]he non-aqueous solvent of the electrolytic solution of the invention” neither mentions the nitrile or sultone additives nor discusses any of their appropriate relative volumes.

The '033 patent does not include adiponitrile or the S=O group-containing compound in determining the total volume of the non-aqueous solvent. The phrase is readily understood by ordinary persons skilled in the art and may be understood by invoking the phrase's plain and ordinary meaning. The court concludes that Samsung has failed to show by clear-and-convincing evidence that the phrase is indefinite.

C. Summary table of agreed terms adopted by the court

The parties agreed to the following constructions either by their Joint Claim Construction Statement or at the claims-construction hearing.

Claim Term or Phrase	Court's Construction
<p>“graphite”</p> <p>(Used in all three patents)</p>	<p>natural or artificial graphite</p>
<p>“cyclic” [compound]</p> <p>(Used in all three patents)</p>	<p>a compound that contains a ring of atoms</p>
<p>“vinylene carbonate”</p> <p>(Used in '001 patent, Claims 1 & 9)</p>	<p>plain and ordinary meaning, including graphically as:</p> <div style="text-align: center;">  </div> <p>Vinylene carbonate is a cyclic carbonate</p>
<p>“solute”</p> <p>(Used in all three patents)</p>	<p>a substance dissolved in a solvent</p>
<p>“solution”</p> <p>(Used in all three patents)</p>	<p>a liquid with components that are uniformly dissolved in the liquid</p>
<p>“solvent”</p> <p>(Used in all three patents)</p>	<p>a substance that dissolves another substance</p>
<p>“linear carbonate”</p> <p>(Used in '809 patent, Claims 1, 2, 4, 10, 12, 19, 20, 23, & 24)</p>	<p>linear alkyl derivative of carbonic, which retains a CO₃ group</p>

<p>“chain carbonate”</p> <p>(Used in ‘001 patent, Claims 1, 3, & 9)</p>	<p>linear or branched alkyl derivative of carbonic acid, which retains a CO₃ group</p>
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D. Summary table of court’s construction of disputed terms

<u>Claim Term or Phrase</u>	<u>Court’s Construction</u>
<p>“main components”</p> <p>(Used in ‘809 patent, Claim 1)</p>	<p>Plain and ordinary meaning; not indefinite</p>
<p>“0.1 to 4% by weight, based upon the total weight of the non-aqueous solvent, of a sultone derivative”</p> <p>(Used in ‘809 patent, Claims 1 & 9)</p>	<p>Plain and ordinary meaning; not indefinite</p>
<p>“anode is composed of a material containing graphite” (‘809 patent, Claim 1)</p> <p>“anode composed of a material containing graphite” (‘809 patent, Claim 9)</p>	<p>Plain and ordinary meaning</p>
<p>“both of said two organic compounds have a reduction potential higher than reduction potentials of the cyclic and chain carbonates”</p> <p>(‘001 patent, Claims 1 & 9)</p>	<p>Plain and ordinary meaning; not indefinite</p>
<p>“30 to 50 volume percent of a cyclic carbonate, based on a total volume of the non-aqueous solvent”</p> <p>(‘033 patent, Claim 1)</p>	<p>Plain and ordinary meaning</p>


IV. Conclusion

For the above reasons, the court construes the disputed claims as noted and so **ORDERS**.

No other claim terms require construction.

IT IS FURTHER ORDERED that this cause is set for a Scheduling Conference on August 10, 2018, at 2:00 p.m., in Courtroom 7, Seventh Floor, United States Courthouse, 501 W. 5th Street, Austin, Texas 78701. The parties shall meet and confer in advance of that date in an attempt to settle this case. If the case is not settled, the parties shall confer in an attempt to reach agreement on a schedule to follow for the remainder of this case. The court will render a Scheduling Order as a result of the August 10, 2018 conference.

SIGNED this 8th day of June, 2018.



LEE YEAKEL
UNITED STATES DISTRICT JUDGE