United States District Court,
D. Delaware.

UNION CARBIDE CHEMS. & PLASTICS TECH. CORP. and UNION CARBIDE CORP ., Plaintiff,
Counter-Defendant.
v.
SHELL OIL CO., Shell Chemical Co., and CRI Catalyst Co., Defendants,
Counter-Plaintiffs.

No. CIV.A.99-CV-274-SLR

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MEMORANDUM OPINION

ROBINSON**, Chief J.**

I. INTRODUCTION

Plaintiff Union Carbide Chemicals & Plastics Technology Corporation filed this patent infringement action on May 3, 1999 against defendant Shell Oil Company, Shell Chemical Company, and CRI Catalyst Company (collectively, "defendant"), alleging that defendant infringes U.S. Patent No. 4,908,343 ("the '343 patent"); U.S. Patent No. 4,916,243 ("the '243 patent"); and U.S. Patent No. 5,057,481 ("the '481 patent"). The '343 and '243 patents relate to particular types of catalysts and processes for making ethylene oxide. The '481 patent relates to compositions used in coatings applications. Plaintiff Union Carbide Corporation joined this litigation on January 4, 2000.

Defendant has denied infringement of all three patents-in-suit and filed affirmative defenses and counterclaims alleging that all three patents are invalid, unenforceable, and not infringed.

Plaintiff FN1 is incorporated in Delaware and has its principal place of business in Connecticut. (D.I.75, para.para. 4-5) Defendant is a Delaware corporation with its principal place of business in Texas. (D.I. 75, para.para. 7-9; D.I. 78 para.para. 7-9) The court has jurisdiction over this action under 28 U.S.C. s.s. 1331

and 1338. Venue is proper in this judicial district by virtue of 28 U.S.C. s.s. 1391(c) and 1400(b).

FN1. Union Carbide Chemicals & Plastics Technology Corporation and Union Carbide Corporation are hereinafter referred to collectively as "plaintiff."

Currently before the court is defendant's motion for partial summary judgment that claims 1, 2, and 7-11 of the '243 patent are invalid under 35 U.S.C. s. 102(b). (D.I.61) Both parties submitted extensive briefs accompanied by expert declarations. (D.I.62, 79, 91) Because the court finds there are genuine issues of material fact as to whether the original application of the '243 patent had a sufficient disclosure of the claimed invention, the court shall deny defendant's motion.

II. BACKGROUND

Plaintiff is the assignee and owner of the '243 patent entitled "New Catalyst Composition and Process for Oxidation of Ethylene to Ethylene Oxide." (D.I.1, para.para. 17-19) The '243 patent application was filed on April 1, 1987, as a continuation of prior U.S. Patent Application Ser. No. 763,273, now abandoned, filed on Aug. 7, 1985, which was a continuation of U.S. Patent Application Ser. No. 497,231, now abandoned, filed on May 23, 1983, which was a continuation of application U.S. Patent Application Ser. No. 116,292, now abandoned, filed on Feb. 13, 1980, which was a continuation-in-part of U.S. Patent Application Ser. No. 21,727 ("the '727 application") filed Mar. 20, 1979, now abandoned. Plaintiff received an effective filing date of March 20, 1979, for the claims at issue here.

Defendant argues that plaintiff should not be entitled to the filing date of the '727 application because that application does not provide a written description of the subject matter of claims 1, 2, and 7-11. Defendant first argues that the '727 application fails to disclose, as an efficiency promoter for ethylene oxide catalysts, the mixture of cesium with lithium, sodium, or rubidium as described in claims 1, 2, and 8-11 of the '243 patent. Because the '727 application only specifically mentions cesium and potassium, defendant asserts that the inclusion of lithium, sodium, and rubidium invalidates those claims.

Defendant then argues that claim 7 of the '243 patent provides that cesium and potassium are present in a weight ratio of "from about 100:1 to about 1:100," but the '727 application only discloses a weight ratio from 25:1 to 1:25.

In order to assess defendant's claim of invalidity, the court will address each of defendant's allegations separately.

A. Does the Original Application Disclose Mixtures of Cesium with Elements Other than Potassium?

Independent claims 1, 10, and 11 of the '243 patent recite a process for producing ethylene oxide using a silver-containing catalyst with a combination of cesium and "at least one other alkali metal selected from the group consisting of lithium, sodium, potassium, and rubidium ...." The '727 application specifically mentions only cesium and potassium as part of the silver-containing catalyst. Defendant thus argues that independent claims 1, 10, and 11 are invalid because they claim a silver-containing catalyst that can include lithium, sodium, and rubidium-elements not specifically mentioned in the '727 application.

Plaintiff claims that all references to cesium and potassium are statements of the preferred embodiment. Plaintiff points to language in the '727 application to refute defendant's narrow reading of the disclosure.

This invention distinguishes over the prior art in the fact that the silver catalyst employed in manufacturing ethylene oxide utilizes at least two alkali metals each in an amount which will achieve a synergy in terms of ethylene oxide selectivity which is greater than has been contemplated or disclosed by any prior art.

(D.I. 162, EX. B at 16) (emphasis added). Plaintiff, through its expert, Dr. Michael Amiridis, claims that the above language is consistent with the position that the written description provides support for the claims. Amiridis asserts that because lithium, sodium, potassium, rubidium, cesium, and francium are among the only six known alkali metals, one of ordinary skill in the art reading the original application would understand that application to disclose, among other things, combinations of cesium with other of the known alkali metals. (D.I.80, para.para. 6, 14) Amiridis notes that one of skill in the art would know not to include francium among the alkali metals because francium is a rare, radioactive element with a half-life of only twenty-one minutes. (Id. para. 6)

Defendant argues that plaintiff's position focuses on one single sentence of the application and ignores the rest of the application. Moreover, defendant says that Amiridis "embarks on a seven-paragraph analysis of extrapolation, interpolation, and multiple assumptions about what the disclosure would apparently teach one skilled in the art ...." (D.I. 90 at 5)

B. Does the Original Application Disclose That Cesium and Potassium Can Be Present in a Weight Ratio of About 100:1 to About 1:100?

Defendant argues that claim 7 is invalid because the '727 application does not disclose mixtures of cesium and potassium in a weight ratio other than from 25:1 to 1:25 while claim 7 claims weight ratios from about 100:1 to about 1:100.

Plaintiff claims that the preferred ratio is from about 25:1 to 1:25 while the claimed ratio can be greater. Plaintiff points to the following language in the '727 application:

Since it is known that for silver catalysts containing alkali metal the efficiency response goes through a maximum with increasing alkali, the upper concentration limit of cesium and potassium can be readily determined by a series of experiments with catalysts containing successively larger amounts of either cesium or potassium as follows ....

(D.I. 80, Ex. B at 18) The application goes on to describe a set of experiments one can use to calculate the upper concentration limit. Plaintiff argues that the original application thus teaches that the relative amounts of cesium and potassium includes the 100:1 to 1:100 ranges as well as the subset ratio of 25:1 to 1:25.

Defendant argues that plaintiff confuses the enablement and written description requirements by pointing to a series of experiments to get to the upper concentration limit. Defendant claims that plaintiff failed to show that it was in possession of the invention at the time of the '727 application.

III. STANDARD OF REVIEW

A court shall grant summary judgment only if "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." Fed.R.Civ.P. 56(c). The moving party bears the burden of proving that no genuine issue of material fact exists. *See* Matsushita Elec. Indus.

Co. v. Zenith Radio Corp., 475 U.S. 574, 586 n. 10 (1986). "Facts that could alter the outcome are 'material,' and disputes are 'genuine' if evidence exists from which a rational person could conclude that the position of the person with the burden of proof on the disputed issue is correct." Horowitz v. Federal Kemper Life Assurance Co., 57 F.3d 300, 302 n. 1 (3d Cir.1995) (internal citations omitted). If the moving party has demonstrated an absence of material fact, the nonmoving party then "must come forward with 'specific facts showing that there is a genuine issue for trial." ' Matsushita, 475 U.S. at 587 (quoting Fed.R.Civ.P. 56(e)). The court will "view the underlying facts and all reasonable inferences therefrom in the light most favorable to the party opposing the motion." Pennsylvania Coal Ass'n v. Babbitt, 63 F.3d 231, 236 (3d Cir.1995). The mere existence of some evidence in support of the nonmoving party, however, will not be sufficient for denial of a motion for summary judgment; there must be enough evidence to enable a jury reasonably to find for the nonmoving party on that issue. *See* Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 249 (1986). If the nonmoving party fails to make a sufficient showing on an essential element of its case with respect to which it has the burden of proof, the moving party is entitled to judgment as a matter of law. *See* Celotex Corp. v. Catrett, 477 U.S. 317, 322 (1986).

IV. DISCUSSION

Defendant claims that the '243 patent is invalid under 35 U.S.C. s. 102(b) which provides: "A person shall be entitled to a patent unless ... the invention was ... in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States." It is undisputed that August 8, 1978, is the date of first commercial use by plaintiff. (D .I. 79 at 2) It is also undisputed that the '727 application was filed on March 20, 1979, less than one year after the first public use of the catalyst. Thus, the issue is whether plaintiff is entitled to that March 20, 1979 filing date. Defendant claims that the '727 application does not satisfy the 35 U.S.C. s. 112 written description requirement.

The court is familiar with the nuances of the written description requirement. *See* Biacore v. Thermo Bioanalysis Corp., 79 F. Supp .2d 422, 466-69 (D.Del.1999). For a later-filed patent to be entitled to the filing date of an earlier patent, the disclosure of the earlier patent must comply with the written description requirement of 35 U.S.C. s. 112. *See* Suntiger, Inc. v. Scientific Research Funding Group, 189 F.3d 1327, 1334 (Fed.Cir.1999). To satisfy this requirement, the disclosure of the earlier-filed application "must reasonably convey to one of skill in the art that the inventor possessed the later-claimed subject matter at the time the patent application was filed." Tronzo v. Biomet, Inc., 156 F.3d 1154, 1158 (Fed.Cir.1998); *see also* Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1563-64 (Fed.Cir.1991) (stating that the written description requirement is "broader than to merely explain how to 'make and use'; the applicant must also convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention." (emphasis in original)); Hoechst Celanese Corp. v. BP Chems. Ltd., 844 F.Supp. 336, 340 (S.D.Tex.1994) ("The test for the written description requirement is not whether a skilled artisan would have known that lithium iodide was 'suitable' in similar processes; the test is whether the artisan would have known, from reading the description, that the inventor of the '73 application did know of this suitability-and hence had possession of this invention." (emphasis in original)). For possession to be demonstrated, a disclosure must "describe the invention[ ] with all its claimed limitations." *Lockwood,* 107 F.3d at 1572.

While the meaning of terms, phrases, or diagrams in a disclosure is to be explained or interpreted from the vantage point of one skilled in the art, all the limitations must appear in the specification. The question is not whether a claimed invention is an obvious variant of that which is disclosed in the specification. Rather, a prior application itself must describe an invention, and do so in sufficient detail that one skilled in the art can clearly conclude that the inventor invented the claimed invention as of the filing date sought.

Id.; see also In re Alton, 76 F.3d 1168, 1172 (Fed.Cir.1996) (stating that in order to satisfy the written description requirement a patent must " 'clearly allow persons of ordinary skill in the art to recognize that [the patentee] invented what is claimed ." ' (quoting In re Gosteli, 872 F.2d 1008, 1012 (Fed.Cir.1989))). The claimed invention, however, need not be described *in ipsis verbis* in order to satisfy the written description requirement. *See* Application of Lukach, 58 C.C.P.A. 1233, 442 F.2d 967, 969 (C.C.P.A.1971).

The written description requirement is separate and distinct from the enablement requirement. *See* Vas-Cath Inc., 935 F.2d at 1563-64. A specification that enables the practice of an invention as broadly as it is claimed need not necessarily describe the claimed invention. *See* id. at 1561. As the Federal Circuit's predecessor court, the Court of Customs and Patent Appeals ("CCPA"), explained:

Where the specification discusses only compound A and contains no broadening language of any kind ... [t]his might very well enable one skilled in the art to make and use compounds B and C; yet the class consisting of A, B, and C has not been described.

Application of DiLeone, 58 C.C.P.A. 925, 436 F.2d 1404, 1405 n .1 (C.C.P.A.1971) (emphasis in original). "That a person skilled in the art might realize from reading the disclosure that such a step is possible is not sufficient indication to that person that the step is part of the applicant's invention." In re Winkhaus, 527 F.2d 637, 640 (C.C.P.A.1975) (emphasis in original). This does not mean, however, that a claimed invention cannot broaden the literal aspects of an earlier-filed application. In this regard, the CCPA in In re Smythe, 480 F.2d 1376 (C.C.P.A.1973) posed the following hypothetical:

If the original specification of a patent application on the scales of justice disclosed only a 1-pound "lead weight" as a counterbalance to determine the weight of a pound of flesh, we do not believe the applicant should be prevented, by the so-called "description requirement" of the first paragraph of s. 112, or the prohibition against new matter of s. 132, from later claiming the counterbalance as a "metal weight" or simply as a 1-pound "weight," although both "metal weight" and "weight" would indeed be progressively broader than "lead weight," including even such an undisclosed, but obviously art-recognized equivalent, "weight" as a pound of feathers. The broader claim language would be permitted because the description of the use and function of the lead weight as a scale counterbalance in the whole disclosure would immediately convey to any person skilled in the scale art the knowledge that the applicant invented a scale with a 1-pound counterbalance weight, regardless of its composition.

Id. at 1384.

Compliance with the written description requirement is a question of fact that must be determined on a case-by-case basis. *See* Vas-Cath Inc., 935 F.2d at 1562; In re Wertheim, 541 F.2d 257, 262 (C.C.P.A.1976) ("the primary consideration is factual and depends on the nature of the invention and the amount of knowledge imparted to those skilled in the art by the disclosure."). In order to succeed, a challenger must provide clear and convincing evidence that persons skilled in the art would not recognize in the disclosure a description of the claimed invention. *See* In re Alton, 76 F.3d at 1175.

A. There Is a Genuine Issue of Material Fact Whether the '727 Application Discloses Mixtures of Cesium with Elements Other than Potassium.

Here, the issue is whether the '727 application discloses mixtures of cesium with alkali metals other than

potassium. Only cesium and potassium are described in the '727 application. The court finds, however, that there is a genuine issue of material fact as to whether one of ordinary skill in the art who read the '727 application would understand it to include alkali metals other than potassium.

A reasonable juror could find support for that conclusion. The '727 application specifically states:

This invention distinguishes over the prior art in the fact that the silver catalyst employed in manufacturing ethylene oxide utilizes at least two alkali metals each in an amount which will achieve a synergy in terms of ethylene oxide selectivity which is greater than has been contemplated or disclosed by any prior art.

(D.I. 162, EX. B at 16) (emphasis added). Dr Amiridis, in his declaration, stated that there are only six known alkali metals. He further explained that one of skill in the art would have known that the "at least two alkali metals" language included lithium, sodium, and rubidium as alternatives to, or in addition to cesium or potassium being present in the silver-containing catalyst. (D.I. 80 at 5)

The '727 application only describes cesium and potassium, but the broadening language of "at least two other alkali metals" is sufficient to create a genuine issue of material fact. Thus, defendant's motion for summary judgment that claims 1, 10, and 11 are invalid is denied.FN2

FN2. Claims 2, 8, and 9 are dependent claims that derive from claim 1. To the extent that their invalidity stems from the invalidity of claim 1, defendant's motion for summary judgment of invalidity is denied to those claims as well.

B. There Is a Genuine Issue of Material Fact Whether Cesium and Potassium Can Be Present in Weight Ratio of About 100:1 to About 1:100

Claim 7 of the '243 patent provides that cesium and potassium are present in a weight ratio of "from about 100:1 to about 1:100." The '727 application, however, only specifically describes a weight ratio from 25:1 to 1:25. Nevertheless, plaintiff has not met its burden of providing clear and convincing evidence that persons skilled in the art would not recognize in the disclosure a description of potassium and cesium present at a weight ratio from about 100:1 to about 1:100.

Instead of specifying the upper concentration limit of cesium and potassium, the '727 application describes in detail a set of experiments to determine that limit. Dr. Amiridis stated in his declaration that those experiments fully teach that "the relevant amounts of cesium and potassium encompass all relevant amounts sufficient to increase the efficiency of ethylene oxide production to a value greater than that obtainable from using a catalyst containing a respective amount of either one alone including, but not limited to, a subset weight ratio from about 100:1 to about 1:100." Dr. Amiridis' statement is sufficient to create a genuine factual dispute. Plaintiff, through its expert, Paul J. Conn, failed to adequately dispute this issue for summary judgment purposes. Whether the series of experiments describes the invention in sufficient detail to allow persons of ordinary skill in the art to recognize that the patentee invented a catalyst wherein the cesium and potassium are present in such a weight ratio is an issue for a jury to decide. Thus, defendant's motion for summary judgment that claim 7 is invalid is denied.

V. CONCLUSION

For the foregoing reasons, the court shall deny defendant's motion for summary judgment that claims 1, 2,

and 7-11 of the '243 patent are invalid. An appropriate order shall issue.

D.Del.,2000.
Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.