

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

SOLVAY, S.A., )  
 )  
 Plaintiff, )  
 )  
 v. ) Civ. No. 06-557-SLR  
 )  
 HONEYWELL SPECIALTY )  
 MATERIALS )  
 LLC and HONEYWELL )  
 INTERNATIONAL INC., )  
 )  
 Defendants. )

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**MEMORANDUM OPINION**

Dated: December 9, 2008  
Wilmington, Delaware

  
ROBINSON, District Judge

## I. INTRODUCTION

Plaintiff Solvay, S.A. ("Solvay") brought suit against defendants Honeywell Specialty Materials LLC and Honeywell International Inc. (collectively referred to as "Honeywell") asserting, inter alia, infringement of U.S. Patent No. 6,730,817 ("the '817 patent"). The '817 patent discloses and claims processes for making 1,1,1,3,3-pentafluoropropane ("HFC-245fa") by reacting 1,1,1,3,3-pentachloropropane ("HCC-240fa") with hydrogen fluoride ("HF") in the presence of a hydrofluorination catalyst. The HFC-245fa product formed by the processes of the '817 patent is one of a group of non-ozone depleting hydrofluorocarbons ("HFC") that were legislatively mandated to replace ozone depleting chlorofluorocarbons ("CFC") and hydrochlorofluorocarbons ("HCFC"). The '817 claims relate to processes for making HFC-245fa that include continuously drawing off gaseous HFC-245fa and hydrogen chloride ("HCl") from the reaction mixture. Solvay asserts that Honeywell infringes claims 1-7, 9-18 and 20-22.

Pending before the court are cross motions for summary judgment. Solvay has filed a motion for summary judgment of infringement of claims 1, 5-7 and 10-11; Honeywell has filed a motion for summary judgment of non-infringement of independent claims 1 and 12, and dependent claims 2-7, 10-11, 13-18, and 21-22. The court has jurisdiction pursuant to 28 U.S.C. § 1338. For the reasons that follow, Solvay's motion for summary judgment of infringement (D.I. 118) is granted. Honeywell's motion for summary judgment of non-infringement (D.I. 132) is granted in part and denied in part.

## II. FACTS

Honeywell produces HFC-245fa in its plant located in Geismar, Louisiana, by

reacting HCC-240fa and HF in the presence of a hydrofluorination catalyst (“the Geismar process”). The Geismar process has been described in fair detail in Honeywell’s third supplemental response to plaintiff’s first set of interrogatories. (D.I. 123, ex. 2 at 3-6) Because this description has been filed under seal, and because it appears that Solvay takes no real issue with the description but, rather, only disputes how the process should be viewed in light of the claim construction, the court will describe only those parts of the Geismar process that are relevant to the specific infringement arguments raised by the parties.

More specifically, the record demonstrates that the Geismar process is a continuous process and involves a liquid phase reaction. (D.I. 120, ex. 3, ex. 5 at 25; D.I. 123, ex. 2 at 3-6, ex. 4 at 101-02) During the continuous process, HFC-245fa, HCl, unreacted HF, chlorine, some catalyst, partially fluorinated intermediates and other by-products are drawn off from the reactor in gaseous form. Except for the catalyst that escapes from the reactor, which is returned to the reactor by the reflux in the catalyst stripper,<sup>1</sup> the other components exit the reactor as a gas stream for further processing. The record reflects that the gas stream that exits the catalyst stripper consists of approximately 69% HF.<sup>2</sup> (D.I. 133 at 2) The record also reflects that the gas stream is fed, inter alia, into an HF recovery unit to recover the unreacted HF, which is later re-fed, as a gas, to the reactor. (D.I. 123, ex. 2 at 3-6)

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<sup>1</sup>The catalyst stripper is a distillation column that sits above the reactor.

<sup>2</sup>According to the record, based on numbers for the years 2004 to 2007, the gas stream contains an average 72.7 mol% of HF and 4.5 mol% of HFC-245fa, with the remainder being primarily HCl, along with chlorine, partially fluorinated intermediates and other by-products. (D.I. 136, ex. 7 at 5)

### 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. Fed. 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.” *Pa. 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. ANALYSIS**

##### **A. Legal Standard for Infringement**

A patent is infringed when a person “without authority makes, uses or sells any patented invention, within the United States . . . during the term of the patent.” 35 U.S.C. § 271(a). A court should employ a two-step analysis in making an infringement determination. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995). First, the court must construe the asserted claims to ascertain their meaning and scope. *Id.* Construction of the claims is a question of law subject to de novo review. See *Cybor Corp. v. FAS Techs.*, 138 F.3d 1448, 1454 (Fed. Cir. 1998). The trier of fact must then compare the properly construed claims with the accused infringing product. *Markman*, 52 F.3d at 976. This second step is a question of fact. See *Bai v. L & L Wings, Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998). Literal infringement occurs where each limitation of at least one claim of the patent is found exactly in the alleged infringer’s product. *Panduit Corp. v. Dennison Mfg. Co.*, 836 F.2d 1329, 1330 n.1 (Fed. Cir. 1987). The patent owner has the burden of proving infringement and must meet its burden by a preponderance of the evidence. *SmithKline Diagnostics, Inc. v. Helena Lab. Corp.*, 859 F.2d 878, 889 (Fed. Cir. 1988) (citations omitted).

##### **B. Independent Claim 1**

Claim 1 of the '817 patent reads as follows:

In a process for the preparation of [HFC-245fa] comprising reaction of [HCC-240fa] with [HF] in the presence of a hydrofluorination catalyst, the improvement which comprises

carrying out the reaction at a temperature and under a pressure at which [HFC-245fa] is gaseous and

isolating [said] [HFC-245fa] from the reaction mixture by drawing off [HFC-245fa] and [HCl] in a gaseous phase as each of said [HFC-245fa] and [HCl] is being formed.

Honeywell argues that the Geismar process does not infringe claim 1 because the process does not isolate from the reaction mixture the HFC-245fa and HCl as they are being formed, as required by the claim. (D.I. 133 at 8) Rather, the Geismar process draws off a gas stream that is mostly HF, and which also contains partially fluorinated compounds.

Solvay responds that Honeywell's argument is based upon an improper claim construction, that is, Honeywell's assertion that the "isolating" limitation of claim 1 requires that HFC-245fa and HCl be the **only** materials in the gas stream that are drawn off from the reaction mixture. (D.I. 169 at 2) Solvay argues that the "isolating" limitation of claim 1 should not be so narrowly construed, because "(1) the gas stream in claim 12 **comprises** HFC-245fa and HCl; (2) the term 'comprising' is an open-ended, non-exclusionary term . . . ; and (3) the 'isolating' [limitation] of claims 1 and 12 are 'nearly identical' and 'should be consistently construed.'" (D.I. 169 at 3, citing *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501 (Fed. Cir. 1997)) (emphasis in original)

Consistent with the claim construction order issued this same date, the court concludes that the Geismar process infringes claim 1 of the '817 patent. Although the gas stream in the Geismar process includes many compounds other than HFC-245fa and HCl, claim 1 has been construed very broadly to reflect the claim language and the

intrinsic evidence. Therefore, Solvay's motion for summary judgment of infringement is granted as to claim 1.<sup>3</sup>

### **C. Independent Claim 12**

Claim 12 of the '817 patent reads as follows:

In a process for the preparation of [HFC-245fa] comprising reaction of [HCC-240fa] with [HF] in the presence of a hydrofluorination catalyst, the improvement which comprises

carrying out the reaction in a reactor equipped with a device for drawing off a gas stream at a temperature and under a pressure at which [HFC-245fa] is gaseous and wherein said device is controlled

(a) to draw off a gas stream comprising [HFC-245fa] and [HCl] as each of said [HFC-245fa] and [HCl] is being formed thereby isolating said [HFC-245fa] from the reaction mixture

(b) to keep in the reactor in the liquid state the unconverted [HCC-240fa], most of the [HF], and most of the products of partial fluorination of [HCC-240fa].

In addition to having an "isolating" limitation "that is essentially the same as that of claim 1" (D.I. 133 at 9), claim 12 adds a further limitation requiring that "most of the [HF]," among other things, be kept in the reactor. The claim construction applied to the "keep in the reactor" limitation requires that "the unconverted HCC-240fa, more than 50% of the HF, and more than 50% of the partially fluorinated intermediates must remain in the reactor vessel in the liquid state" (D.I. 219 at 8-9)

Solvay argues that the "keep in the reactor" limitation should be construed broadly to read "keep in, or return to, the reactor," based on the following description

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<sup>3</sup>Honeywell did not offer opposition to the motion vis a vis dependent claims 5, 6, 7, 10 and 11; therefore, the motion is granted with respect to these dependent claims as well. (D.I. 172 at 2)

from the specification: "It is advantageous to separate the [HFC-245fa] and the [HCl] from the reaction mixture as they are being formed and to **keep in, or return to**, the reactor the unconverted reactants . . . ." ('817 patent, col. 2, ll. 64-67) (emphasis added) Solvay goes on to argue that the "liquid state" limitation likewise should be construed broadly enough to cover the re-entry of compounds that were drawn off the reaction mixture as a gas and return to the reaction mixture as a gas, the argument being that, even if (e.g.) the HF in the Geismar process were returned to the reactor as a gas, the HF must be available as a liquid to react with HCC-240fa to form HFC-245fa in Honeywell's liquid phase reaction. The specification, however, undermines Solvay's argument, as it goes on in this regard to state: "By means of suitable control, this device makes it possible to draw off in vapour phase the [HFC-245fa] and [HCl] which are produced **while keeping in the reactor, in the liquid state**, the unconverted [HCC-240fa] and most of the [HF], as well as, where appropriate, most of the products of partial fluorination of [HCC-240fa]." ('817 patent, col. 3, ll. 7-14) (emphasis added) (See *also* D.I. 138, ex. 5 at 12) In other words, the "retain or return to" language is not used to describe the further limitations of claim 12, either in the specification or the prosecution history.

The court concludes, therefore, that the Geismar process does not infringe claim 12. Honeywell's motion for summary judgment on noninfringement is granted in this regard.<sup>4</sup>

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<sup>4</sup>As a result, Honeywell cannot infringe the asserted claims that depend from independent claim 12, to wit, claims 13-18, 21-22.

#### **IV. CONCLUSION**

For the reasons stated, Solvay's motion for summary judgment of infringement of independent claim 1 (and those asserted claims that depend from claim 1) is granted. Honeywell's motion for summary judgment of noninfringement of independent claim 12 (and those asserted claims that depend from claim 12) is granted. An appropriate order shall issue.

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 LLC and HONEYWELL )  
 INTERNATIONAL INC., )  
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 Defendants. )

**ORDER**

At Wilmington this 9th day of December, 2008, consistent with the memorandum opinions and memorandum order issued this same date;

IT IS ORDERED that:

1. Plaintiff Solvay, S.A.'s ("Solvay") motion for summary judgment of infringement (D.I. 118) is granted, to wit: claims 1, 5-7, and 10-11 are infringed.
2. Solvay's motion for summary judgment of no invalidity (D.I. 121) is denied.
3. Defendants Honeywell Specialty Materials LLC and Honeywell International Inc.'s (collectively "Honeywell") motion for summary judgment of non-infringement (D.I. 132) is granted in part and denied in part, to wit: claims 12, 13-18 and 21-22 are not infringed.
4. Honeywell's motion for summary judgment of invalidity (D.I. 134) is granted,

to wit: claims 1, 5, 7 and 10-11 are invalid.

5. Given the above decisions, the following motions are denied as moot:

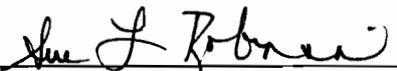
a. Honeywell's motion for leave to file a supplemental brief regarding its motion for invalidity and Solvay's motion of no invalidity. (D.I. 205)

b. Solvay's motions for summary judgment regarding the charge of inequitable conduct and Honeywell's seventh affirmative defense of laches, equitable estoppel and prosecution laches. (D.I. 115; D.I. 125)

c. Honeywell's motion for leave to file a supplemental brief regarding its seventh affirmative defense of laches, equitable estoppel and prosecution laches. (D.I. 208)

d. Solvay's Daubert motions regarding Honeywell's damages expert and patent law expert. (D.I. 128; D.I. 130)

6. The clerk of court is directed to enter judgment against plaintiff Solvay, S.A. and in favor of defendants Honeywell Specialty Materials LLC and Honeywell International Inc.

  
United States District Judge