

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ARKEMA INC. and ARKEMA FRANCE,
Petitioner,

v.

HONEYWELL INTERNATIONAL INC.,
Patent Owner.

Case PGR2016-00012
Patent 9,157,017 B2

Before MICHAEL P. TIERNEY, GRACE KARAFFA OBERMANN, and
MICHELLE N. ANKENBRAND, *Administrative Patent Judges*.

TIERNEY, *Administrative Patent Judge*.

DECISION
Institution of Post-Grant Review
37 C.F.R. § 42.208

I. INTRODUCTION

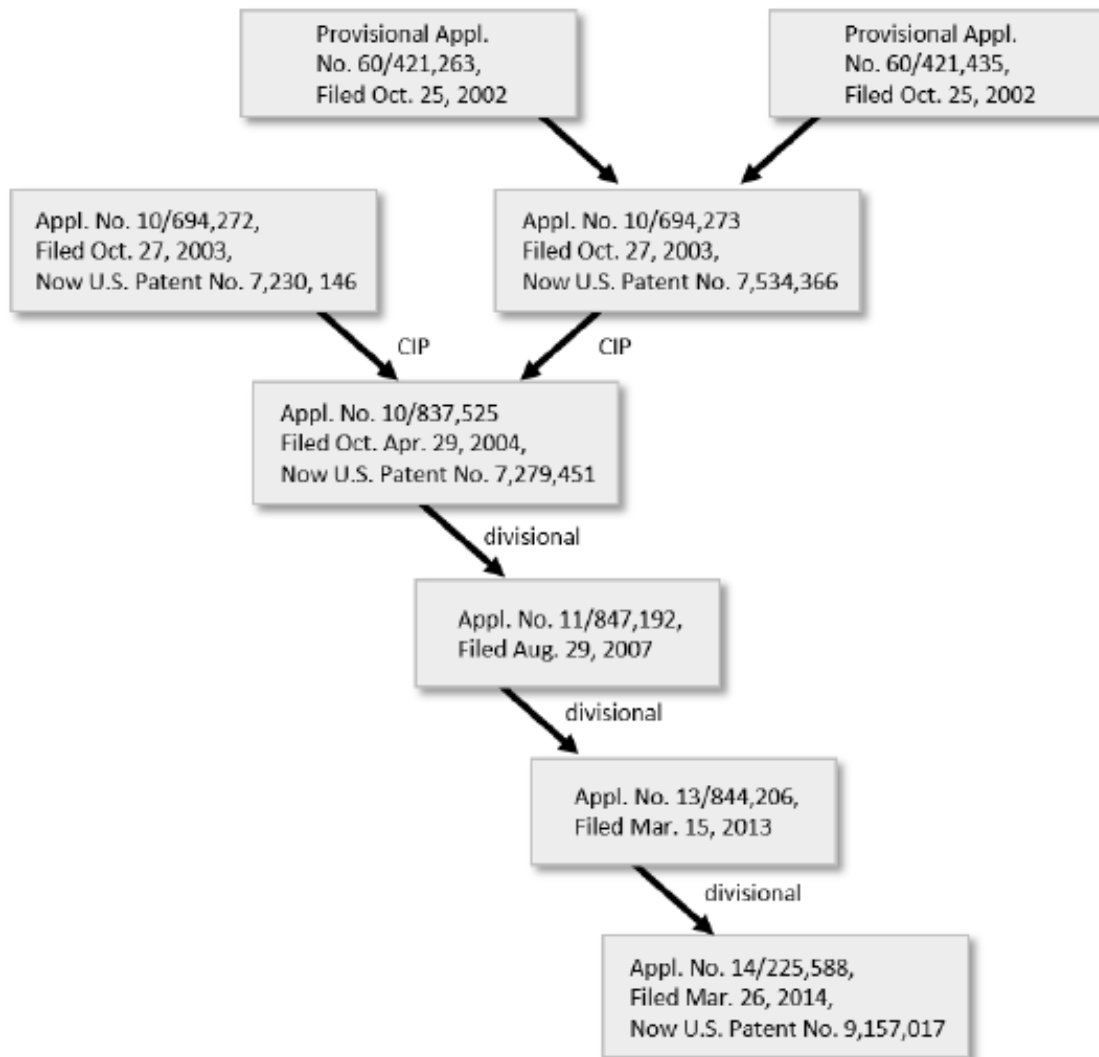
Arkema, Inc. and Arkema France (“Petitioner”), filed a Petition requesting a post-grant review of claims 1–20 of U.S. Patent 9,157,017 B2 (Ex. 1001, “the ’017 patent”). Paper 7 (“Pet.”). Patent Owner, Honeywell International, (“Patent Owner”) timely filed a Preliminary Response (Paper 12, “Prelim. Resp.”) to the Petition. We have jurisdiction under 35 U.S.C. § 324.

To institute a post-grant review, we must determine that the information presented in the Petition, “if such information is not rebutted, would demonstrate that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable.” 35 U.S.C. § 324(a). For the reasons set forth below, upon considering the Petition and the Preliminary Response, we conclude that the information presented in the Petition establishes that it is more likely than not that Petitioner will prevail in challenging claims 1–20 of the ’017 patent. We authorize a post-grant review to be instituted as to those claims.

Our factual findings and conclusions at this stage of the proceeding are based on the evidentiary record developed thus far. This decision to institute trial is not a final decision as to patentability of claims for which post-grant review is instituted. Our final decision will be based on the full record developed during trial.

A. Related Proceedings

The '017 patent claims the benefit of a series of applications, the earliest of which was filed on October 25, 2002. Ex. 1001, 1:5–25. The '017 patent priority chain is depicted below:



Id.; Prelim. Resp. 14. Although Patent Owner has not asserted the '017 patent in any currently pending proceedings, several applications in the

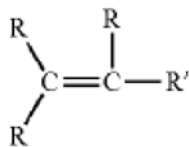
priority chain have been asserted and undergone reexamination. Patent Owner Mandatory Notices, Paper 9, 1–3.

The '017 patent also has been challenged in PGR2016-00011 and IPR2016-00643. Pet. 2.

B. The '017 Patent

The '017 patent is directed to the use of fluorine substituted olefins, including tetra- and penta-fluoropropenes, in a variety of applications. Ex. 1001, Abstract. For example, the fluorine substituted olefins are described as having use in methods of depositing catalysts, sterilizing articles, cleaning methods, applying medicaments, fire extinguishing, flavor formulations and inflating agents. *Id.* Although not mentioned in the '017 patent abstract, the specification states that a preferred aspect of the invention is directed to refrigerant compositions comprising at least one multi-fluorinated olefin. *Id.* at Field of the Invention, 1:29-34.

Preferred fluorinated substituted olefins include compounds having the Formula I, XCF_zR^{3-z} , “where X is a C2 or a C3 unsaturated, substituted or unsubstituted, alkyl radical, each R is independently Cl, F, Br, I or H, and z is 1 to 3.” *Id.* at 3:45-50. The '017 patent also states that preferred compositions include compounds of Formula II, depicted below:



(II)

“where each R is independently Cl, F, Br, I or H[,] R' is $(CR_2)_nY$, Y is CRF_2 and n is 0 or 1.” *Id.* at 4:10-21. The patent goes on to state that “[i]n highly preferred embodiments, Y is CF_3 , n is 0 and at least one of the remaining Rs

is F.” *Id.* at 22–23. Hence, given that R can independently be F, Cl, Br, I or H, with at least one R being F, even the highly preferred embodiments of the invention according to Formula II encompass a significant number of substituted fluoro-propenes. The specification goes on to state that, in “certain highly preferred embodiments” the compositions comprise one or more tetrafluoropropenes and identifies HFO-1234ze (1,3,3,3-tetrafluoropropene) as particularly preferred. *Id.* at 4:58–63. Of note, the specification does not clarify what is meant by “certain” highly preferred embodiments comprise tetrafluoropropenes, although the discussion appears after a discussion of “highly preferred embodiments” having low toxicity where n is zero.

The compositions of the ’017 patent, “particularly those comprising HFO-1234ze,” are said to not have a substantial negative affect on atmospheric chemistry with a Global Warming Potential (GWP) of preferably less than 500 and an Ozone Depletion Potential (ODP) of not greater than 0.05. *Id.* at 5:38–6:4.

Low toxicity is said to be an advantageous property and the specification states that it was “surprisingly and unexpectedly found that certain of the compounds having a structure in accordance with the formulas described above [formulas I and II] exhibit a highly desirable low level of toxicity compared to other such compounds. *Id.* at 4:39–43. The specification states that “applicants believe that a relatively low toxicity level is associated with compounds of Formula II, preferably wherein Y is CF₃, wherein at least one R on the unsaturated terminal carbon is H, and at least one of the remaining Rs is F.” *Id.* at 4:48–53. The specification goes on to state that in highly preferred embodiments, n is zero. *Id.* at 4:56–58.

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