

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 40

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte TAKASHI SHIBANUMA, TAKASHI KANEMURA  
and SATOSHI KOYAMA

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Appeal No. 1996-0684  
Application No. 08/116,550<sup>1</sup>

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HEARD: November 18, 1999

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Before WINTERS, ROBINSON and LORIN, Administrative Patent Judges.

WINTERS, Administrative Patent Judge.

DECISION ON APPEAL

This appeal was taken from the examiner's decision rejecting claims 1 through 3, 5 through 8, and 10. Claim 11,

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<sup>1</sup> Application for patent filed September 7, 1993. According to appellants, this application is a continuation of Application No. 07/886,823, filed May 22, 1992, now abandoned.

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which is the only other claim remaining in the application,  
stands allowed.

Claim 1 is representative:

1. A process for fluorinating a halogenated hydrocarbon consisting essentially of reacting a halogenated hydrocarbon with hydrogen fluoride in the presence of a fluorination catalyst which comprises a partially fluorinated chromium oxide containing from 0.01-10% by mole, based on the amount of chromium oxide, of at least one metal selected from the group consisting of ruthenium and platinum.

The references relied on by the examiner are:

Manzer	5,051,537	Sep. 24, 1991
Ohsaka (British patent application)	2,030,981	Apr. 16, 1980

The issue presented for review is whether the examiner erred in rejecting claims 1 through 3, 5 through 8, and 10 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Manzer and Ohsaka.

#### DISCUSSION

In rejecting appellants' claims, the examiner proposes combining the ruthenium catalyst of Manzer with the partially fluorinated chromium oxide catalyst of Ohsaka to form "a mixed catalyst" containing both ruthenium and partially fluorinated

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chromium oxide. The examiner argues that it would have been obvious to use that mixed catalyst in the gas-phase fluorination process disclosed by Manzer in column 6, EXAMPLES 4-5. See the Examiner's Answer, paragraph bridging pages 3 and 4. We disagree.

For the reasons succinctly set forth in the Appeal Brief, pages 5 through 7, we find that the proposed combination of references is improper. Manzer cites and discusses British Patent No. 2,030,981 (Ohsaka) in column 1, lines 19 through 50. There, Manzer suggests that the inorganic chromium (III) catalysts of Ohsaka promote the oxidation of hydrogen chloride to molecular chlorine and water and, therefore, cause a decrease in selective conversion from 1,1,1-trifluorochloroethane to 1,1,1,-2-tetrafluoroethane. In contrast, Manzer discloses that "the catalyst of the present invention," including the ruthenium catalyst exemplified in column 6, EXAMPLES 4-5, minimizes the oxidation of hydrogen chloride to molecular chlorine and water. See Manzer, column 3, lines 5 through 43. Manzer thus embarks on a different path, disclosing metal catalysts for use in the gas-phase fluorination of 1,1,1-trifluorochloroethane to 1,1,1,2-

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tetrafluoroethane selected from the group consisting of cobalt, manganese, nickel, palladium, silver and/or ruthenium but not chromium based catalysts.

In sum, Manzer suggests that the inorganic chromium (III) catalysts of Ohsaka promote the oxidation of hydrogen chloride to molecular chlorine and water whereas Manzer's catalysts, including ruthenium, minimize the oxidation of hydrogen chloride to molecular chlorine and water. On these facts, we believe that the only reason, suggestion, or motivation to combine the ruthenium catalyst of Manzer with the partially fluorinated chromium oxide catalyst of Ohsaka, in the manner proposed by the examiner, stems from appellants' specification and not the cited prior art. In our judgment, the proposed combination of references is based on the impermissible use of hindsight and is improper. For this reason, we conclude that the examiner has not established a prima facie case of obviousness of claims 1 through 3, 5 through 8, and 10 based on the combined disclosures of Manzer and Ohsaka.

Having concluded that the examiner has not established a prima facie case of obviousness of claims 1 through 3, 5 through 8, and 10 based on the cited prior art, we shall not

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discuss the Shibanuma Declaration executed June 4, 1993, relied on by appellants as rebutting any such prima facie case.

One further point warrants attention. In the specification (page 9, Example 4), appellants describe the preparation of a catalyst containing partially fluorinated chromium oxide and platinum. Using that catalyst, appellants carry out the gas-phase fluorination of 1,1,1-trifluorochloroethane to 1,1,1,2-tetrafluoroethane under "the above common conditions," i.e., the same reaction conditions employed in Comparative Example 1 using a partially fluorinated chromium oxide catalyst with no additional metal. In the specification, page 10, lines 1 through 3, appellants state that:

In comparison with Comparative Example 1, the catalyst life and the throughput were increased without decreasing the activity.

That statement, however, appears to be incorrect. Compare the results reported in Example 4 (Catalyst Life, 63 hours; Throughput, 153 g) with the results reported in Comparative Example 1 (Catalyst Life, 78 hours; Throughput, 177 g). On return of this application to the Examining Corps, we

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recommend that both appellants and the examiner clarify whether the statement in the specification, page 10, lines 1 through 3 is, in fact, a misstatement. Based on the results set forth in appellants' specification, it appears that the combination of partially fluorinated chromium oxide and platinum decreases catalyst life and throughput compared with the use of partially fluorinated chromium oxide alone.

The decision of the examiner is reversed.

REVERSED

SHERMAN D. WINTERS	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
	)	
DOUGLAS W. ROBINSON	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
HUBERT C. LORIN	)	
Administrative Patent Judge	)	

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