

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte KEI-YU KO, LI LI AND GUY T. BLALOCK,

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Appeal No. 2002-0702  
Application No. 09/711,324

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ON BRIEF

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Before KIMLIN, GARRIS and OWENS, Administrative Patent Judges.  
GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal which involves claims 1-38. These are all of the claims in the application.

The subject matter on appeal relates to a dry etchant comprising a component having a particular general formula, wherein the dry etchant is formulated to etch doped silicon dioxide with a selectivity over (e.g., at a faster rate than)

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undoped silicon dioxide<sup>1</sup>. An example of the aforementioned component is C<sub>2</sub>H<sub>4</sub>F<sub>2</sub>. This appealed subject matter is adequately illustrated by independent claims 1 and 20 (i.e., the only independent claims on appeal) which read as follows:

1. A dry etchant, comprising a component with the general formula C<sub>2</sub>H<sub>x</sub>F<sub>y</sub>, where x is an integer from 3 to 5, inclusive, y is an integer from 1 to 3, inclusive, and x + y = 6, said dry etchant being formulated to etch doped silicon dioxide with selectivity over at least undoped silicon dioxide.

20. A dry etchant comprising a component with the general formula C<sub>2</sub>H<sub>x</sub>F<sub>y</sub>, where x is an integer from 3 to 5, inclusive, y is an integer from 1 to 3, inclusive, and x + y = 6, said dry etchant being formulated to etch doped silicon dioxide at a faster rate than at least undoped silicon dioxide.

The references set forth below are relied upon by the examiner as evidence of obviousness:

Bosch et al. (Bosch)	5,626,716	May 06, 1997
Ding et al. (Ding)	5,814,563	Sep. 29, 1998

Claims 1-38 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ding in view of Bosch.<sup>2</sup>

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<sup>1</sup> As indicated on page 2 of the brief, the subject appeal is related to appeal no. 2001-2244 of appellants' application SN 09/625,144. The pivotal issues of these respective appeals are distinct. Therefore, the disposition of the related appeal is not determinative of the disposition of the subject appeal.

<sup>2</sup> On page four of the brief, the appellants indicate that the appealed claims will stand or fall together. As a consequence, we will focus on the independent claims before us in assessing the merits of the above-noted rejection. See 37 CFR 1.192(c)(7)(2001).

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We refer to the brief and reply brief and to the answer for a thorough discussion of the opposing viewpoints expressed by the appellants and by the examiner concerning this rejection.

OPINION

For the reasons which follow, we will sustain the § 103 rejection of claims 1-38 as being unpatentable over Ding in view of Bosch.

As recognized by both the appellants and the examiner, Ding discloses a dry etchant comprising a variety of components including various fluorohydrocarbon gases such as  $C_2H_4F_2$  (e.g., see the paragraph bridging columns 5 and 6) which falls within the general formula defined by the independent claims on appeal. Significantly, patentee also discloses  $CHF_3$  as one of his fluorohydrocarbon gases and teaches that his etchant may comprise mixtures of these fluorohydrocarbon gases (id.). This is significant because a mixture of  $C_2H_4F_2$  and  $CHF_3$  corresponds to the appellants' claimed and disclosed dry etchant which possesses the selectivity characteristic defined by appealed claims 1 and 20 (e.g., see page 8 of the subject specification as well as dependent claims 11, 16, 28 and 35).

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Ding additionally discloses that his etchant composition preferably includes his aforementioned fluorohydrocarbon gas in combination with a fluorocarbon gas which is preferably  $\text{CF}_4$  (e.g., see the paragraph bridging columns 2 and 3 as well as the paragraph bridging columns 9 and 10). Thus, patentee's disclosure would have suggested an etchant gas composition comprising the fluorohydrocarbon gas  $\text{C}_2\text{H}_4\text{F}_2$  in admixture with the fluorocarbon gas  $\text{CF}_4$ . This is significant because such a mixture corresponds to the etchant mixture disclosed and claimed by the appellants as possessing the selectivity characteristic under consideration (e.g., again see specification page 8 as well as dependent claims 11, 16, 28 and 35).

Under the circumstances recounted above, it is appropriate to conclude that the etchant composition disclosure of Ding would have suggested etchant mixtures such as  $\text{C}_2\text{H}_4\text{F}_2$  in combination with  $\text{CHF}_3$  as well as  $\text{C}_2\text{H}_4\text{F}_2$  in combination with  $\text{CF}_4$ . Because these etchant mixtures correspond to those which are disclosed and claimed by the appellants as providing the selectivity characteristic defined by the appealed independent claims, it is appropriate to consider these etchant mixtures suggested by Ding to necessarily and inherently possess the aforementioned selectivity characteristic. See *In re Skoner* 517 F.2d 947, 950,

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186 UPQP 80, 82-83 (CCPA 1975) and Ex parte Obiaya, 227 USPQ 58, 60 (BPAI 1985).

Therefore, it is appropriate to require the appellants to prove that these etchant mixtures would not necessarily and inherently possess the here claimed characteristic. Whether the rejection is based on "inherency" under 35 U.S.C. § 102, on "prima facie obviousness" under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the inability of the Patent and Trademark Office to manufacture products (i.e., etchant mixtures) or to obtain and compare prior art products. See In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977).

The foregoing circumstances reflect that the appellants have simply discovered a new property or characteristic of etchant compositions which fall within the broad disclosure of Ding and which at a minimum would have been suggested by patentee's disclosure. It is here appropriate to remind the appellants that the discovery of a new property of a previously known composition, even if unobvious from the prior art, cannot impart patentability to such a composition. See In re Spada, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990); also see Ex parte Obiaya, 227 USPQ at 60.

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For the above stated reasons, we hereby sustain the examiner's § 103 rejection of claims 1-38 as being unpatentable over Ding in view of Bosch.<sup>3</sup>

The decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

EDWARD C. KIMLIN	)	
Administrative Patent Judge	)	
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	)	
	)	BOARD OF PATENT
BRADLEY R. GARRIS	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
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	)	
TERRY J. OWENS	)	
Administrative Patent Judge	)	

vsh

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<sup>3</sup> A discussion of the Bosch reference is unnecessary in light of our disposition of this appeal.

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