

**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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* JOSEPH S. SHVEIMA

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Appeal No. 1996-2253  
Application No. 08/199,907

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ON BRIEF

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Before WALTZ, KRATZ, and TIMM, *Administrative Patent Judges*.  
TIMM, *Administrative Patent Judge*.

**DECISION ON APPEAL**

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-24. Claims 25-33, the only other claims pending in this application, have been withdrawn pursuant to a restriction requirement.

**BACKGROUND**

The appellant's invention relates to a process for preparing a pillared phyllosilicate clay, the pillared clay product of the process, a process of activating the pillared clay, and a catalyst system made by the process of activation. Claim 1 and 2 are representative of the subject matter on appeal and are reproduced below:

Claim 1. A process for preparing a pillared phyllosilicate clay which comprises:

(a) preparing a hydrolyzed first solution by dissolving a chromium salt and a base in water, heating said first solution to a temperature in the range of about 20°C to about 100°C while stirring continuously until the solution reaches a PH in the range of about 1.5 to about 2.5 and thereby producing a master batch;

(b) diluting said master batch with water to produce a diluted second solution and heating said diluted second solution to produce a heated second solution to produce a heated second solution;

(c) adding a solid phyllosilicate clay selected from the group consisting of dioctahedral and trioctahedral smectites to said heated second solution, and continuing heating;

(d) recovering said pillared phyllosilicate clay; and

(e) drying said pillared phyllosilicate clay to form a first product.

Claim 2. A product according to the process of claim 1.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Pinnavaia et al. (Pinnavaia)	4,665,045	May
12, 1987		

Claims 1-18 and 20-24 stand rejected under 35 U.S.C. § 103 as being unpatentable over Pinnavaia.

We reverse the rejection as it applies to the process claims 1, 3-17, and 20-23. However we find it necessary to remand the application to the examiner for further examination of product-by-process claims 2, 18, and 24, in light of the legal standards discussed below, as the issues with regard to these claims are not ripe for appeal.

**OPINION**

Claim 1 is directed to a process for preparing a pillared phyllosilicate clay by preparing a first solution of chromium salt, a base and water, diluting the first solution and then adding a solid phyllosilicate clay. The appellant and examiner agree that Pinnavaia does not teach two aspects of the invention as recited in claim 1: (1) heating the first chromium salt-base solution until a specified pH level is reached and (2) dilution of a first solution after initial

heating and before continuing heating (Brief, page 4; Answer, page 4).

The process disclosed by Pinnavaia contains no mention of heating until the chromium salt-base solution reaches a specified pH level. As pointed out by the appellant, Pinnavaia relies on time and temperature rather than on pH to determine when the heating of the solution should end and when the master batch is properly formed (Brief, page 4). The claim is a process claim. Differences in the manipulative steps of the process serve to distinguish the process from the prior art. The fact that Pinnavaia discloses time and temperatures overlapping or within the claimed range indicates that the resulting product might be the same, but it does not, without more, indicate that the process is suggested. The examiner has not provided a rationale which would lead us to believe that pH would be monitored in the process or that those of ordinary skill in the art understood that a very acidic pH of about 1.5 to about 2.5 could be used to determine the end point of a process in which a high pH substance, i.e. a base, was being added to a salt.

There is also no suggestion in the prior art relied on by the examiner of including a dilution step in the process of the reference. In the claimed process, a master batch solution is formed by dissolving a chromium salt and a base in water to form a first solution. The master batch is then diluted with water and heated. A solid phyllosilicate clay is added to the heated diluted solution. The Pinnavaia reference, on the other hand, teaches adding water to clay to form a slurry. The slurry is added to an undiluted chromium salt-base solution. There is no intermediate step of diluting or heating a diluted solution. Or, put in another way, there is no master batch that is diluted and heated before clay addition. The examiner tries to explain away this difference by stating that "the mere step of diluting the solution before further heating (aging) is considered to be an obvious matter of process choice, absent a showing of new or nonobvious results." (Answer, page 4, lines 6-9).

To establish a prima facie case of obviousness with respect to a process claim, the examiner must establish that the prior art suggests doing what appellant has done. Here, there is no suggestion of including a step of diluting a

master batch solution and heating the diluted solution in the Pinnavaia reference. The examiner points to no prior art indicating that such a dilution process step is conventional in the art of pillarizing clay. The examiner gives us no rationale as to why such dilution and heating are obvious matters of process choice and we can find no basis for coming to that conclusion.

For the above reasons, the examiner has failed to establish a *prima facie* case of obviousness with respect to process claims 1, 3-17, and 20-23. We note that a showing of new or nonobvious results is not required for patentability when the evidence is insufficient to establish a *prima facie* case.

***Product Claims 2, 17, and 24***

With respect to product claims 2, 17, and 24, we note that these claims are in product-by-process format, but have not been separately addressed by the examiner. Rather the examiner has grouped these claims with the method claims. These claims are of a very different scope and require a separate analysis from those of the method.

Product-by-process claims are properly classified as product claims. The process steps recited in product claims therefore serve only to define the structure of the product and thus the claims are not limited to the manipulative aspects of the steps. *In re Bridgeford*, 357 Fd. 679, 683, 149 USPQ 55, 58 (CCPA 1966); *In re Thorpe*, 777 Fd. 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985). Thus, if the product of a product-by-process claim is the same as or obvious from a product in the prior art, the claim is unpatentable even though the product was made by a different process. In such a circumstance, when it is reasonable to conclude that the product of a slightly different process is the same, the burden is upon the appellant to come forward with evidence showing that the product is indeed different. *In re Brown*, 173 USPQ 685 (CCPA 1972). The burden of proof for product-by-product claims is lower because the Patent Office is not equipped to manufacture products and make physical comparisons to discover the differences between them. *In re Fessmann*, 489, Fd. 742, 744, 180 USPQ 324, 326 (CCPA 1974); *In re Brown*, supra. Therefore, if the reactants of a process and the

conditions under which the product is made are substantially identical, the evidence will support a *prima facie* case of unpatentability under 35 U.S. C. § 102/103. *In re Spada*, 911 Fd. 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Because the examiner did not separately analyze the patentability of the product-by-process claims using the above outlined legal analysis, we find that the issues, as presented, do not permit a meaningful review of these claims. Therefore, we remand the application to the examiner for a determination of the patentability of the product-by-process claims and a proper development of the issues.

#### **CONCLUSION**

To summarize, the decision of the examiner to reject claims 1, 3-17, and 20-23 under 35 U.S.C. § 103 is reversed and the application is remanded to the examiner.

This application, by virtue of it's "special" status requires immediate action. Manual of Patent Examining Procedure § 708.01 (7th ed., July 1998). It is important that the Board be informed promptly of any action affecting the appeal in this case.

REVERSED AND REMANDED

THOMAS A. WALTZ	)	
Administrative Patent Judge	)	
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	)	
	)	
	)	BOARD OF PATENT
PETER F. KRATZ	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
	)	
CATHERINE TIMM	)	
Administrative Patent Judge	)	

Appeal No. 1996-2253  
Application No. 08/199,907

Page 10

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APPEAL NO. 1996-2253 - JUDGE TIMM  
APPLICATION NO. 08/199,907

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APJ WALTZ

APJ KRATZ

DECISION: **REVERSED**

Prepared By: LETICIA PIHULIC

**DRAFT TYPED:** 10 Jul 02

**FINAL TYPED:**