

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 31

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YASUO SHIBASAKI, KIICHI ODA and TAKESHI FUKUDA

Appeal No. 1996-2930
Application 08/301,734¹

ON BRIEF

Before JOHN D. SMITH, OWENS and WALTZ, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the examiner's final rejection of claims 1 and 7, which are all of the claims remaining in the

¹ Application for patent filed September 7, 1994. According to the appellants, the application is a continuation of Application 07/907,933, filed July 1, 1992, now abandoned.

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application.

THE INVENTION

Appellants claim a hydrothermal treatment process for making fine hexagonal flaky alumina particles having a recited particle size. Claim 1 is illustrative and reads as follows:

1. A process for producing fine hexagonal flaky alumina particles having a particle size of 1.0 micron or smaller and a thickness of 0.1 micron or smaller, the process comprising the steps of introducing water or an aqueous alkali solution into a hydrothermal treatment system and subjecting aluminum hydroxide or alumina hydrate having a particle size of 1 micron or smaller to a hydrothermal treatment in the water or aqueous alkali solution at a temperature of 350EC to 600EC and under a pressure of 200 kg/cm² to 50 kg/cm².

THE REFERENCE

Yamaguchi et al. (JP '465)² 39-13465 July 13, 1964
(Japanese patent publication)

THE REJECTIONS

Claims 1 and 7 stand rejected under 35 U.S.C. § 112, first paragraph, on the ground that the specification fails to adequately teach how to make and/or use the invention. These

²Citations herein to this reference are to the English translation thereof which is of record.

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claims also stand rejected under 35 U.S.C. § 103 as being unpatentable over JP '465.

OPINION

We have carefully considered all of the arguments advanced by appellants and the examiner and agree with appellants that the aforementioned rejections are not well founded. Accordingly, we reverse these rejections.

Rejection under 35 U.S.C. § 112, first paragraph

The examiner argues that appellants' specification fails to provide an enabling disclosure for carrying out the hydrothermal treatment in water or an aqueous alkali solution because at some combinations of temperature and pressure within the temperature and pressure ranges recited in appellants' claim 1, water cannot exist as a liquid (answer, pages 3-7). Appellants argue that the claims do not require that the water or aqueous alkali solution is in the form of a liquid (brief, page 3).

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Water can exist in the form of a liquid, solid or vapor.³ "Solution" has been defined as "a spontaneously forming homogeneous mixture of two or more substances, retaining its constitution in subdivision to molecular volumes, displaying no settling, and having various possible proportions of the constituents, which may be solids, liquids, gases, or intercombinations",⁴ and "the act by which a gas, liquid, or solid is dispersed homogeneously in a gas, liquid, or solid without chemical change."⁵ Thus, "water" and "solution" need not be in liquid form.

Appellants' specification states that the hydrothermal treatment is in water or an aqueous alkali solution at a temperature of 350EC or above and a pressure of 200 kg/cm² or below (page 4, lines 1-3) and provides examples within these ranges (pages 7-10). The examiner has not explained why, in

³ See *The Condensed Chemical Dictionary* 923 (Van Nostrand Reinhold, 9th ed. 1977).

⁴ See *Webster's II New Riverside Dictionary* 1107 (Riverside 1984).

⁵ See *The Random House College Dictionary* 1252 (Random House 1973).

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view of this disclosure, one of ordinary skill in the art could not have carried out appellants' claimed process without undue experimentation. The examiner, therefore, has not carried the burden of establishing a *prima facie* case of nonenablement. See *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993); *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 750 F.2d 1569, 1576, 224 USPQ 409, 413 (Fed. Cir. 1984). Consequently, we reverse the rejection under 35 U.S.C. § 112, first paragraph.

Rejection under 35 U.S.C. § 103

JP '465 discloses a process for making fine grained corundum crystals for electrical insulation material by treating low crystallinity alumina or alumina hydrate in hot water at a temperature greater than 350EC and a pressure greater than 200 kg/cm² (pages 1-2).

The examiner relies upon the JP '465 example (pages 4-5) wherein, at 450EC and 1000 kg/cm², 80% of the alumina crystals produced have a size of 3F or less (answer, page 5). The examiner argues that to obtain a product having a small

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particle size the particle size of the starting material must be small, and that it would have been obvious to one of ordinary skill in the art to optimize the particle size (answer, pages 5-6).

The particles produced in the JP '465 example are called "hexagonal plates". However, in two portions of JP '465 (pages 2 and 4), it is stated that the method produces particles in the shape of hexagonal columns without hexagonal plates being produced. Thus, there is inconsistency in the JP '465 disclosure. Furthermore, in appellants' declaration (filed March 20, 1995; paper no. 24), scanning electron microscope photos of particles produced at 500EC and 1000 kg/cm², which are similar conditions to those used in the JP '465 example, show that the particles are granular rather than plate shaped as required by appellants' claims.

Regardless, even if the JP '465 particles are considered to be plate shaped, the examiner's argument is not persuasive for the following reason.

JP '465 states that the particles are to be used in electrical insulating material (pages 1 and 5). Thus,

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optimizing the conditions in the JP '465 process would produce particles having the optimum size for this use. However, appellants' particles are disclosed as being useful as a raw material for ceramics and as a pigment for paint (specification, page 1, lines 3-6). The examiner has not explained, and it is not apparent, why optimizing the particle size in the JP '465 process for a different purpose than that of appellants would produce particles having the size recited in appellants' claim 1.

The examiner argues (answer, page 6) that the end points of appellants' ranges include a temperature of 350EC and a pressure of 200 kg/cm² which nearly overlap with the end points of the JP '465 ranges, i.e., greater than 350EC and greater than 200 kg/cm² (page 2). The examiner, however, has not explained, and it is not apparent, why JP '465 would have fairly suggested, to one of ordinary skill in the art, hydrothermal treatment of 1F or smaller particles at that combination of temperature and pressure.

For the above reasons the examiner has not established a *prima facie* case of obviousness. We therefore reverse the

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rejection under 35 U.S.C. § 103.

DECISION

The rejections of claims 1 and 7 under 35 U.S.C. § 112, first paragraph, nonenablement requirement, and under 35 U.S.C. § 103 over JP '465, are reversed.

REVERSED

JOHN D. SMITH)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
TERRY J. OWENS))
Administrative Patent Judge)	APPEALS AND
)	
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THOMAS A. WALTZ)	
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