The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte Werner Pompetzki,
Joachim Schuler, and
Dietrich Maschmeyer

Appeal No. 2005-0138
Application No. 09/618,044

ON BRIEF

Before WALTZ, JEFFREY T. SMITH, and PAWLIKOWSKI, Administrative Patent Judges.

WALTZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the primary examiner's rejection of claims 1, 2 and 5 through 17, which are the only claims pending in this application. Although appellants take this appeal from a non-final rejection (dated Oct. 23, 2003, Paper No. 22), we have jurisdiction since the claims have been twice rejected. See 35 U.S.C. § 134.

According to appellants, the invention is directed to a process for the hydrogenation of acetone to produce isopropanol, where acetone with a water content of less than or equal to 1.0% by

weight is subjected to a liquid-phase hydrogenation in at least two process stages (Brief, page 2).[1] Representative independent claim 1 is reproduced below:

> 1. A process for the hydrogenation of acetone, which comprises:
> conducting the liquid-phase hydrogenation of acetone having a water content of less than or equal to 1.0% by weight in at least two hydrogenation process stages, thereby preparing isopropanol product.

The examiner relies upon the following references as evidence of obviousness:

Hiles et al. (Hiles)	4,626,604	Dec. 02, 1986
Fukuhara et al. (Fukuhara)	5,081,321	Jan. 14, 1992

The Sigma Catalog (Sigma), p. 1681, 1994 edition.[2]

The claims on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over Fukuhara in view of Hiles (Answer, page 3).

---

[1]We refer to and cite from the Brief dated Jan. 22, 2004.

[2]We note that this reference was relied upon in the statement of the rejection in the Office action dated Oct. 23, 2003, Paper No. 22, page 2. This reference was listed as "Prior Art of Record" on page 3 of the Answer but was not in the statement of the rejection in the Answer (see also page 3). However, the examiner relies upon this reference on page 6 of the Answer as evidence that "commercially available acetone contains less that [sic, than] 1.0% by weight of water." Appellants have argued the merits of this reference (Brief, pages 5-6; Reply Brief, page 1). Therefore we consider this reference as part of the evidence of obviousness. *Cf., In re Hoch,* 428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407 n.3 (CCPA 1970).

We *reverse* this rejection essentially for the reasons stated in the Brief, Reply Brief, and those reasons set forth below.

OPINION

The examiner finds that Fukuhara discloses a process for the liquid-phase hydrogenation of acetone in a reactor to produce isopropanol (Answer, page 4). The examiner finds that two differences between the claimed subject matter and the process of Fukuhara are that the reference is silent about the amount of water contained in the acetone reactant and the use of multiple hydrogenation stages (*id.*). The examiner applies Hiles for the teaching to employ multi-stage hydrogenation reactions to produce a greater conversion of the unsaturated reactant (*id.*).

From these findings, the examiner concludes that it would have been obvious to incorporate additional hydrogenation stages as taught by Hiles into the process of Fukuhara to optimize the total conversion of the isopropanol product (Answer, page 5). The examiner also concludes that, even though Fukuhara is silent regarding the water content of the acetone reactant, “there is no reason for the skilled artisan to believe that the Fukuhara et al. process does not utilize acetone having a water content of less than or equal to 1.0% by weight” considering the high conversions

and yields of the isopropanol product disclosed in the examples of Fukuhara (*id.*). We disagree.

The initial burden of establishing a case of *prima facie* obviousness rests with the examiner. *See In re Oetiker,* 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 2002). "The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification. [Citations omitted]." *In re Gordon,* 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "[T]here must be some logical reason apparent from positive, concrete evidence of record which justifies a combination of primary and secondary references." *In re Regel,* 526 F.2d 1399, 1403 n.6, 188 USPQ 136, 139 n.6 (CCPA 1975).

As correctly argued by appellants, Fukuhara discloses that "[w]ater is also a useful solvent for the hydrogenation of the invention." Col. 1, ll. 57-59 (Brief, page 5; Reply Brief, page 2). Accordingly, on this record the examiner has not met the initial burden of providing evidence or convincing reasons why one of ordinary skill in this art would have desired an acetone reactant with a water content less than or equal to 1.0% by weight in the hydrogenation reaction disclosed by Fukuhara. The examiner has not convincingly explained why the high conversion and yield

disclosed in the examples of Fukuhara would have necessarily required a low water content in the acetone reactant, especially in view of the reactions taught by appellants for the hydrogenation of acetone (see the specification, page 4).

We also note that the examiner has not established any motivation for using the specialty reagent-grade acetone as disclosed by Sigma (Answer, page 7) in the industrial process taught by Fukuhara (col. 1, ll. 42-60).[3]

For the foregoing reasons and those stated in the Brief and Reply Brief, we determine that the examiner has not established a *prima facie* case
of obviousness in view of the reference evidence. Therefore we need not consider the sufficiency of appellants' evidence of non-obviousness (Brief, page 3, citing the specification, pages 8-9, and the Declaration under 37 CFR § 1.132 executed July 4, 2001). *See In re Geiger,* 815 F.2d 686, 688,

[3]We also note that neither appellants nor the examiner has discussed why one of ordinary skill in this art would have incorporated the *vapor phase* multiple hydrogenation stage process of Hiles into the *liquid phase* (trickle down) hydrogenation process taught as essential to the Fukuhara process (see the abstracts of each reference; see also Fukuhara, col. 3, ll. 56-58).

2 USPQ2d 1276, 1278 (Fed. Cir. 1987). Accordingly, the examiner's rejection of claims 1, 2 and 5-17 under 35 U.S.C. § 103(a) over Fukuhara in view of Hiles is reversed.

The decision of the examiner is reversed.

REVERSED

THOMAS A. WALTZ Administrative Patent Judge	)	
JEFFREY T. SMITH Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
BEVERLY A. PAWLIKOWSKI Administrative Patent Judge	)	

TAW/jrg

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314