Paper No. 28

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Ex parte JEAN-PIERRE DATH, LUC DELORME, JACQUES-FRANCOIS GROOTJANS, XAVIER VANHAEREN and WALTER VERMEIREN

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Appeal No. 2002-1010
Application No. 09/206,210

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HEARD: March 20, 2003

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Before WARREN, WALTZ and DELMENDO, *Administrative Patent Judges*.

WALTZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal from the primary examiner's refusal to allow claims 9, 11, 13, 14 and 18 as amended subsequent to the final rejection.[1] Claims 1 through 8 are the only other claims pending in this application and stand withdrawn from further consideration by the examiner as directed to a non-

[1]An amendment dated July 5, 2001, Paper No. 16, subsequent to the final rejection, was entered by the examiner as noted in the Advisory Action dated July 25, 2001, Paper No. 17.

elected invention (Brief, page 2; Answer, page 2, ¶3).[2] We have jurisdiction pursuant to 35 U.S.C. § 134.

According to appellants, the invention is directed to a process for the catalytic cracking of olefins in which the feedstock is contacted with an MFI crystalline silicate catalyst having a silicon/aluminum atomic ratio of 180 to 1000, where the catalyst has been prepared by a process in which aluminum atoms have been removed from throughout the crystalline silicate framework (Brief, page 3). Claim 9 is illustrative of the invention and is reproduced below:

9. A process for the catalytic cracking of olefins in a hydrocarbon feedstock which is selective towards light olefins in the effluent, the process compromising[3] contacting a hydrocarbon feedstock containing olefins having a first composition of at least one olefinic component with a MFI crystalline silicate catalyst having a silicon/aluminum atomic ratio of from 180 to 1000 to produce an effluent having a second composition of at least one olefinic component, with the feedstock and the effluent having substantially the same olefin content by weight therein, the catalyst having been produced by heating the catalyst in steam to remove aluminum from a crystalline silicate framework of the catalyst and extracting aluminum from the catalyst by contacting the catalyst with a complexing agent for aluminum to remove, from pores of the framework, aluminum deposited therein during the steaming step, thereby to increase the silicon/aluminum atomic ratio

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[2]All reference to and citation from the Brief is to the Substitute Brief dated Sep. 10, 2001, Paper No. 19.

[3]This term apparently should read "comprising" (see the specification, page 7).

of the catalyst, and calcining the catalyst at elevated temperature.

The examiner has relied upon the following references as evidence of obviousness:

Bowes et al. (Bowes)	4,876,411	Oct. 24, 1989
Kuehl et al. (Kuehl)	4,954,243	Sep. 04, 1990
Colombo et al. (EP '060) (published European Patent Application)	0 109 060	May 23, 1984

The claims on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over EP '060 in view of Bowes and Kuehl (Answer, page 3). The claims on appeal stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting over (1) claims 1-16 of copending application no. 09/206,207 (Answer, page 5); (2) claims 1-16 of copending application no. 09/206,208 (Answer, page 6); (3) claims 1-26 of copending application no. 09/206,216 (*id.*); and (4) claims 1-16 of copending application no. 09/206,218 (Answer, sentence bridging pages 6-7).

We summarily *affirm* all of the examiner's provisional rejections based on obviousness-type double patenting for the reasons stated in the Answer. We *reverse* the examiner's rejection based on section 103(a) essentially for the reasons stated in the Brief, Reply Brief, and those reasons set forth below. Therefore the decision of the examiner to reject the claims on appeal is affirmed.

A. The Rejections based on Obviousness-type Double Patenting

Appellants present no arguments against the examiner's provisional rejections based on the judicially created doctrine of obviousness-type double patenting (Brief, page 5). Accordingly, we presume that appellants acquiesce to these provisional rejections and thus summarily affirm all of the examiner's provisional rejections based on the judicially created doctrine of obviousness-type double patenting for the reasons advanced by the examiner in the Answer. *See In re Wetterau,* 356 F.2d 556, 557-58, 148 USPQ 499, 500-01 (CCPA 1966); *cf. Ex parte Karol,* 8 USPQ2d 1771, 1773-74 (Bd. Pat. App. & Int. 1988).

B. The Rejection based on 35 U.S.C. § 103(a)

The examiner finds that EP '060 discloses a process for the conversion of olefins to propylene by contacting the feed with a zeolite catalyst, where this catalyst has a Si/Al ratio of greater than 350 "which meets the instantly claimed values." Answer, page 4.[4] The examiner finds that EP '060 does not disclose or teach the preparation of the zeolite catalyst as

[4]As noted by the examiner on pages 9 and 14 of the Answer, the "greater than 350" mole ratio of Si/Al disclosed by EP '060 is equivalent to an atomic ratio for Si/Al of "greater than 175."

claimed by appellants but finds that there is a reasonable basis to infer that the catalyst of the reference is identical or only slightly different from those claimed (Answer, pages 4 and 8-9).

The examiner applies Bowes and Kuehl for their teaching of methods of making dealuminated zeolites for use in cracking processes, which methods include the steps of steaming, extraction of aluminum with a complexing agent, and calcination (Answer, page 4). From these findings, the examiner concludes that it would have been obvious to one of ordinary skill in the art to have used either the dealuminated zeolites of Kuehl or Bowes in the process of EP '060 because these secondary references teach that dealuminated zeolite catalysts may be used in cracking processes and all the references are directed to "high Si MFI type zeolites." Answer, paragraph bridging pages 4-5. We disagree.

The mere finding that the silica/alumina atomic ratios of EP '060 and the claimed atomic ratio are similar (i.e., overlapping) is not *per se* sufficient evidence to support the examiner's "reasonable basis" that the catalysts of the prior art and the claims are identical or substantially identical. *See In re Spada,* 911 F.2d 705, 708, 15 USPQ2d 1655, 1657-58 (Fed. Cir. 1990); *In re Best,* 562 F.2d 1252, 1255, 195 USPQ 430, 433,(CCPA 1997). Catalysts may have the identical silica/alumina atomic

ratio but differ markedly in structure and composition. As correctly argued by appellants (Brief, page 6; Reply Brief, page 3) and admitted by the examiner (Answer, page 4), EP '060 does not address even broadly the dealumination of its zeolite catalyst. Accordingly, we determine that the examiner has not presented a *prima facie* case of obviousness over EP '060 alone (*id.*).

Appellants argue that the secondary references to Bowes and Kuehl are specifically directed only to surface treatment of the zeolite, i.e., only removing aluminum from the surface of the catalyst structure (Brief, pages 6-7; Reply Brief, page 3). Although appellants cite portions of Bowes and Kuehl that refer to this surface treatment, both references suggest that some aluminum may be removed from the internal pore structure of the catalyst. See Kuehl, col. 25-34, where the reference teaches that the EDTA chelating agent does <u>not</u> go into the zeolite pores but does remove aluminum ions migrating out of the pores by complexing. See Bowes, col. 8, ll. 20-29, where the reference teaches that steaming partially or completely decomposes the template material and, at the same time, removes framework (zeolitic) aluminum, <u>preferentially</u> aluminum located at the surface of the zeolite (thus implicitly suggesting that some internal aluminum is removed).

However, even assuming *arguendo* that Bowes and Kuehl disclose or suggest the same method recited in the claims on appeal for production of the MFI crystalline silicate catalyst (i.e., steaming and dealumination to remove aluminum from the pores), we agree with appellants that the examiner has not provided any convincing reason or motivation for combining these references with the process of EP '060 (Brief, page 9).[5] *See In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). The only "general" statements of motivation supplied by the examiner are that all of the references disclose zeolites that may be used in cracking and all references are directed to "high Si MFI type zeolites." Answer, paragraph bridging pages 4-5. These general statements are not convincing, since EP '060 is directed to zeolite catalysts with a Si/Al atomic ratio of 175 or greater, while Kuehl is directed to catalysts with Si/Al atomic ratios of greater than 6 (col. 2, ll. 63-64; col. 12, ll. 59-63) with examples as high as 35 (Examples 6, 7 and 8), and Bowes teaches activity "even when the silica to aluminum mole ratio exceeds 30 [atomic ratio 15]," with examples as high as 54. See col. 3, ll. 40-43, and col. 11, l. 61, Table 2. Therefore we determine that the examiner has not established why one of

[5]In view of our decision, we need not discuss appellants' reference evidence (Exhibit B, Brief, page 9) or objective evidence of "substantially improved results" (Brief, page 13).

ordinary skill in this art would have used the steaming and dealumination processes of Bowes or Kuehl, directed to relatively low Si/Al atomic ratios, with the process of EP '060 when this reference already has a desired high Si/Al atomic ratio catalyst of 175 or greater.

For the foregoing reasons, we determine that the examiner has not established a *prima facie* case of obviousness in view of the reference evidence. Accordingly, the rejection of the claims on appeal under 35 U.S.C. § 103(a) over EP '060 in view of Bowes or Kuehl is reversed.

C. Summary

The provisional rejections of claims 9, 11, 13-14 and 18 under the judicially created doctrine of obviousness type double patenting over (1) claims 1-16 of application no. 09/206,207; (2) claims 1-16 of application no. 09/206,208; (3) claims 1-26 of application no. 09/206,216; and (4) claims 1-16 of application no. 09/206,218 are summarily affirmed.

The rejection of claims 9, 11, 13-14 and 18 under 35 U.S.C. § 103(a) over EP '060 in view of Bowes or Kuehl is reversed.

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

Charles F. Warren Administrative Patent Judge	)	
Thomas A. Waltz Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
Romulo H. Delmendo Administrative Patent Judge	)	

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