

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 TORSTEN SIXT,
ERHARD BOSCH,
MARTINA HAERING,
and
WOLFGANG SCHUETT

Appeal No. 2006-1761
Application No. 10/153,074

ON BRIEF

Before KIMLIN, GARRIS and WALTZ, **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 1 through 10 and 18 through 20, which are the only claims pending in this application (see the amendment dated April 21, 2005, subsequent to the final rejection, which has been entered by the examiner as per the Advisory Action dated

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May 27, 2005). We have jurisdiction pursuant to 35 U.S.C. § 134.

According to appellants, the invention is directed to a process of sealing two or more fuel cell components in a fuel cell or fuel cell stack, which process comprises applying a curable elastomeric sealing composition as specified in the claims on appeal (Brief, page 2). Independent claim 1 is illustrative of the invention and is reproduced below:

1. A process of sealing two or more fuel cell components in a fuel cell or fuel cell stack, said process comprising applying a curable elastomeric sealing composition onto at least one component to be sealed or between two components to be sealed, said curable elastomeric sealing composition comprising

component (A) comprising at least one polyorganosiloxane (I) bearing on average at least two alkenyl groups per molecule;

component (B) comprising at least one polyorganosiloxane (II) bearing on average at least two Si-bonded hydrogen atoms per molecule;

an effective amount of hydrosilylation catalyst (IV);
and

an additive (III) comprising an organic sulfur compound, an organosilicon sulfur compound, or mixture thereof,

and vulcanizing said curable elastomeric sealing composition to form a seal between said two or more fuel cell components.

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

Kovar et al. (Kovar)	5,977,249	Nov. 02, 1999
Koschany et al. (Koschany)	6,475,656	Nov. 05, 2002 (filed Jan. 29, 1998)

Claims 1-10 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Koschany in view of Kovar (Answer, page 3).

Claims 18-20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kovar (Answer, page 5).¹

Based on the totality of the record, we *affirm* both rejections on appeal essentially for the reasons stated in the Answer, as well as those reasons set forth below.

OPINION

The examiner finds that Koschany discloses every limitation of the claims on appeal, including a fuel cell comprising a membrane electrode unit with a sealant material that forms a seal between two or more fuel cell components, where the sealant

¹We note that the examiner erroneously lists claim 17 as rejected over Koschany in view of Kovar (Answer, page 3) although claim 17 has been cancelled (Brief, page 2). Furthermore, we note that appellants state that claims 18-20 have been rejected "on non-specified grounds" (Brief, page 3) even though the ground was specifically stated in the final Office action dated Jan. 21, 2005 (page 8; see the Answer, page 8; Reply Brief, page 1).

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material may be a silicone, but this reference fails to teach the specific elastomeric sealant material specified in claim 1 on appeal (i.e., component (A), component (B), catalyst (IV), and additive (III)) (Answer, pages 3-4).

The examiner finds that Kovar teaches a silicone elastomeric sealing material within the scope of claim 1 on appeal (Answer, page 4). From these findings, the examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of appellants' invention to apply the curable, elastomeric sealant taught by Kovar to seal the fuel cell components of Koschany for the advantages taught by Kovar (Answer, pages 4-5).

Appellants do not dispute the examiner's factual findings from either Koschany or Kovar (Reply Brief, page 2). Rather, appellants argue that it was known in the art that silicones were useful as sealants in fuel cells but their use was found unsatisfactory (Brief, pages 7-8). Appellants also argue that while Kovar teaches that his silicone elastomer is useful as a sealant in general, there is no teaching or disclosure that his compositions would have been suitable for fuel cells (Brief, page

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8). Appellants further argue that Koschany does not indicate what type of silicone seal should be used out of possibly thousands of silicones, and there is no motivation to single out the sealant of Kovar from among all the references as a sealant for fuel cells, thus at best rendering use of the Kovar sealant in fuel cells “‘obvious to try’” (Brief, pages 10-11; Reply Brief, page 3).

Appellants' arguments are not persuasive. As admitted by appellants (specification, page 2; Brief, page 8; Reply Brief, page 2), the use of silicones in general as sealants for fuel cell components was well known in the art.² Koschany teaches that conventionally sealing rings or strips are used to provide reliable sealing of the gas spaces from each other in fuel cell components (col. 1, ll. 58-61; col. 2, ll. 25-27). Although Koschany discloses silicones as one of several possible sealant materials (col. 4, ll. 9-11 and 39; col. 8, ll. 7-10), with

²We note the presentation of claim 18 in Jepson-type format, thus impliedly admitting the preamble as prior art. See *In re Aldrich*, 398 F.2d 855, 857, 158 USPQ 311, 312 (CCPA 1968); *In re Ehrreich*, 590 F.2d 902, 909, 200 USPQ 504, 510 (CCPA 1979).

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an epoxy as an example (col. 8, ll. 39-47), Koschany also specifically teaches achieving "particularly firm adhesion" by using silicone adhesive (col. 10, ll. 6-9).

Kovar admittedly discloses the same silicone sealants as recited in claim 1 on appeal (Reply Brief, page 2). Kovar also teaches the advantages of using this sealing composition in "gaskets in the automotive and engineering sectors," such advantages including very good mechanical properties, low cost, low compression set, and good reproducibility and long shelf life (col. 7, l. 64-col. 8, l. 18). Kovar also teaches numerous advantages in processing, including that a "low compression set is advantageous for numerous applications in the field of sealing technology, e.g., O-rings, valve-cover gaskets, sealing lips . . ." (col. 8, ll. 37-51). Therefore we agree with the examiner that it would have been obvious to one of ordinary skill in this art to use the specific silicone sealant disclosed by Kovar for the sealing ring of Koschany for the advantages taught by Kovar for rings and gaskets in the automotive and engineering sealing arts. Regarding appellants' "'obvious to try'" argument (Brief, page 10), we note that the same argument was made in *In*

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re Corkill, 771 F.2d 1496, 1500, 226 USPQ 1005, 1008 (Fed. Cir. 1985), where the court affirmed the obviousness rejection of the claims in light of the prior art teaching that "hydrated zeolites will work" in detergent formulations, even though the "inventors selected the zeolites of the claims from among 'thousands' of compounds." In this appeal we have the generic teaching of silicones as sealants of fuel cell components in Koschany as well as the teachings of Kovar of the advantages of his specific silicone sealants in the field of sealing technology.

For the foregoing reasons and those stated in the Answer, we determine that the examiner has established a *prima facie* case of obviousness in view of the reference evidence. However, appellants present arguments that the examples and comparative examples in the specification produce "surprising and unexpected results" (Brief, pages 8-9; Reply Brief, page 2, footnote 1, and page 6). Accordingly, we consider the evidence for and against obviousness. See *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

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We are not persuaded of non-obviousness by the examples and comparative examples (specification, pages 16-18, as summarized in the Brief, pages 8-9). These results are not commensurate in scope with the claims sought to be patented, with the examples limited to specific materials in specific amounts while claim 1 on appeal is not so limited. See *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980).

Based on the totality of the record, including due consideration of appellants' arguments and evidence, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of section 103(a). Therefore we affirm both rejections on appeal.

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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)(1)(iv)(2004).

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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)	
THOMAS A. WALTZ)	
Administrative Patent Judge)	

TAW/hh

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