

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(2) is not binding precedent of the Board.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. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LUTZ SCHMALSTIEG,
HERMANN GRUBER,
BERND RIBERI,
and KLAUS NACHTKAMP

Appeal No. 96-0736
Application 07/984,596¹

ON BRIEF

Before KIMLIN, JOHN D. SMITH, and OWENS, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed December 2, 1992.

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This is an appeal from the final rejection of claims 1-6, 8, and 9, all the claims remaining in the present application.

Claim 1 is illustrative:

1. Polyisocyanates based on a polyhydroxyl polyether having a molecular weight of from about 350 to about 500 and tolylene diisocyanate containing ether and urethane groups having

a) an NCO content of from about 11.8 to about 14.4% by weight,

b) an average NCO functionality of from about 3.1 to about 4.0 and

c) a free tolylene diisocyanate content of less than about 0.1% by weight.

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

Schnabel et al. 4,385,171 May 24, 1983
(Schnabel)

Appellants' claimed invention is directed to polyisocyanates, and a process for their preparation, wherein the polyisocyanates have the recited NCO content and average NCO functionality, as well as a free tolylene diisocyanate content of

less than about 0.1% by weight. Since vapors from free tolylene diisocyanate are toxic to humans, it is desirable to limit the

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amount of such diisocyanate in the polyisocyanates to less than 0.1% by weight. Appellants limit the content of free tolylene diisocyanate by preparing the polyisocyanates from tolylene diisocyanate and a polyhydroxyl polyether having a molecular weight of from about 350 to about 500.

Appealed claims 1-6, 8, and 9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Schnabel.

We have thoroughly reviewed the respective positions advanced by appellants and the examiner. In so doing, we find that the evidence of record supports a conclusion of non-obviousness for the claimed subject matter. Accordingly, we will not sustain the examiner's rejection.

Like appellants, Schnabel discloses the preparation of polyisocyanates by the reaction of a polyhydroxyl polyether and tolylene diisocyanate. The reference teaches that the polyol reactant has a molecular weight from about 62 to about 7,000, which range encompasses the claimed range of 350-500. Also,

while Schnabel, like appellants, is directed towards preparing polyisocyanates that have a free diisocyanate monomer content of less than 0.1%, Schnabel accomplishes this by co-distilling the

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unreacted diisocyanate with a compound such as tetraethylene-glycol dimethylether, phthalic acid dimethylester, diphenylethane, diethyl pimelate, etc. Schnabel does not appreciate that the low levels of monomer can be obtained by using polyhydroxyl polyether having a molecular weight of from about 350 to about 500, which use eliminates the need of Schnabel's co-distillation compound. As pointed out by appellants, the examples of the present specification demonstrate that polyisocyanates containing less than about 0.1% by weight free diisocyanate can be made without Schnabel's co-distillation compound when the molecular weight of the polyhydroxyl polyether is between 350 and 500.

In addition, Schnabel does not disclose polyisocyanates having the claimed NCO content of 11.8-14.4% and an average NCO functionality of from about 3.1 to about 4.0. Accordingly, based on the totality of evidence of record, we find that the evidence of nonobviousness outweighs the evidence of obviousness.

It is the examiner's position that appellants' specification examples are not probative of nonobviousness since they are not commensurate in scope with the appealed claims, which are "open," and, therefore, do not preclude the presence of Schnabel's co-

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distillation compound. The error in the examiner's reasoning is that although it can be said that the appealed claims are open to the inclusion of Schnabel's co-distillation compound, they also define a process and composition which does not contain a co-distillation compound and, yet, has a free diisocyanate content of less than about 0.1% by weight. Manifestly, Schnabel provides no teaching or suggestion of preparing polyisocyanates according to the claimed method without utilizing a co-distillation compound. Furthermore, Schnabel does not disclose or suggest polyisocyanates having the claimed NCO content and average NCO functionality, and the examiner has not advanced a line of reasoning which establishes that the polyisocyanates of Schnabel inherently possess the claimed NCO content and average NCO functionality.

In conclusion, based on the foregoing, the examiner's decision rejecting the appealed claims is reversed.

REVERSED

Edward C. Kimlin)
Administrative Patent Judge)
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) BOARD OF PATENT

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John D. Smith)	
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
)	
Terry J. Owens)	
Administrative Patent Judge)	

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