

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NEIL H. NODELMAN, ALBERT MAGNOTTA
and ROBERT LORING

Appeal No. 96-2708
Application 08/335,432¹

ON BRIEF

Before WINTERS, DOWNEY and GARRIS, Administrative Patent Judges.

DOWNEY, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 3-6.

Claim 7 remains in the application and stands objected to by the examiner (Answer, page 3).

¹ Application for patent filed November 7, 1994. According to the appellants, the application is a continuation of Application 08/207,504, filed March 8, 1994; which is a continuation-in-part of Application 08/052,009, filed April 22, 1993, now abandoned.

The subject matter of the appeal is directed to an active hydrogen group composition suitable for use in a reaction injection molding (RIM) process (claims 3-5 and 7) and a process for preparing a molded product by the RIM technique (claim 6).

Appellants separately argue claims 3 and 6. Claim 3 is representative of the invention and reads as follows:

3. An active hydrogen group containing mixture which

comprises:

A) a catalyst system comprising:

a) a zinc-containing compound capable of catalyzing the reaction of an isocyanate group with an[sic] hydroxyl group,

b) a non-zinc-containing metal compound capable of catalyzing the reaction of an isocyanate group with an[sic] hydroxyl group, and

c) a tertiary amine,

wherein the amounts of materials used correspond to the following:

1) the weight ratio of tertiary amine c) to metal compound b) is from 1:10 to 40:1,

2) the weight ratio of tertiary amine c) to zinc compound a) is from 1:3 to 100:1, and

3) the weight ratio of metal compound b) to zinc compound a) is from 1:5 to 50:1.[sic: ,]

B) one or more compounds having molecular weights of from 400 to 10,000, and containing at least two isocyanate reactive groups,

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C) one or more compounds having molecular weights of from 62 to 399, and containing at least two isocyanate reactive groups, and

D) one or more acidic additives,

with the proviso that the amount of the zinc-containing compound is no more than 0.25% by weight of the total weight components B), C) and D).

The references relied upon by the examiner are:

Perry et al (Perry) (Great Britain)	980,139	Jan. 13, 1965
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Sweeney; Introduction to Reaction Injection Molding; 54-55, 68-69 (1979)

Claims 3-6 stand rejected under 35 U.S.C. § 103 as unpatentable over Perry in view of Sweeney.

After careful consideration of the opposing arguments presented by appellants and the examiner as well as the cited prior art, we find no error in the examiner's determination that the claims are unpatentable over Perry in view of Sweeney.

Perry, like appellants, is directed to a polyurethane molded product made by blending a diisocyanate component with a zinc-containing compound catalyst, a non-zinc containing metal compound catalyst, a tertiary amine, a polyol or a mixture of polyols having a molecular weight between 200-6000 which contain at least two isocyanate reactive groups, and an acid additive in the weight ratios required by the

claims. Note in particular that in Example 4 (page 2) Perry describes blending tolylene 2:4 and 2:6-diisocyanate with zinc carboxylates (component Aa), lead acetate (component Ab), dimethylbenzylamine and 4-dimethylaminopyridine (components Ac), a polyol having a molecular weight of 6000 (component B) and castor oil fatty acid (component D). While Perry teaches the use of polyols and mixtures of polyols having a molecular weight between 200-6000, he does not specifically disclose the use of a low molecular weight(62-399) with the higher molecular (400-10,000) polyol in combination. Perry also does not teach the use of RIM. However, Sweeney teaches that diol chain extenders, such as 1,4-butanediol, when added to polyol/diisocyanate constituents result in a molded product that is stiffer and harder (pages 54-55). In addition, Sweeney teaches that RIM enables better mixing of the composition over hand mixing (Page 69, Table 3-6) Accordingly, one of ordinary skill in the art would have found it prima facie obvious to employ a low molecular weight diol chain extender in polyol/diisocyanate systems, especially in view of Perry's teachings to employ mixtures of polyols of a molecular weight range that encompasses that claimed, with the reasonable expectation that the molded product would be stiffer and harder. In addition, one of ordinary skill in this art would have found it obvious to do mechanically (RIM) what was previously done by hand(stirring). In re Venner, 262 F.2d 91, 95, 120 USPQ 192, 194 (CCPA 1958).

Appellants direct their arguments primarily to the Perry reference, alleging that Perry does not provide for the inclusion of an “acidic additive” as required by claim 3. Perry employs a neutralizing agent which, according to appellants, is not truly acidic. We disagree. Appellants do not define the expression “acid additive” in their specification; rather they provide a list of representative compounds which they identify as “acid in nature” (page 11). In particular, appellants identify “fatty acids” as exemplary of an “acid additive.” See page 11, line 21. Perry describes, in example 4, the use of castor oil fatty acid, a C₁₈ unsaturated fatty acid, also known as ricinoleic acid.² Perry’s fatty acid compound satisfies appellants’ acid additive requirement. Additionally, Perry teaches that his “neutralizing agents” include not only materials that are neutral at ordinary temperature, but also materials that are strongly acidic which only dissolve slowly in the reaction medium, as well as materials which slowly react with one of the components to form a strong acid. (see column 2, lines 66-75). In our view, Perry’s neutralizing agents are not excluded from nor inconsistent with the appellants’ expression “acid additive”.

Appellants direct our attention to examples 2, 4, 6, and 8 in their specification as evidence of nonobviousness. In these examples, appellants attempt to show that the

² See the Condensed Chemical Dictionary, Ninth Edition (1977) page 171 and 755. (copy attached)

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addition of a zinc-containing compound to the combination of catalysts, active hydrogen group containing compounds, and acidic additives results in decreased reaction rates and increased reaction times.

We point out that the presentation of objective evidence of nonobviousness, in itself, does not mandate a conclusion of nonobviousness. Newell Cos. V. Kenney Mfg. Co., 864 F.2d 757, 768, 9 USPQ2d 1417, 1426 (Fed. Cir. 1988), **cert. denied**, 493 U.S. 814 (1989). We have reviewed the evidence and do not find it to outweigh the evidence of obviousness relied upon by the examiner. In re Johnson, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984); and In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

In this instance, we find that appellants have not compared their claimed invention to Perry, the closest prior art. In re DeBlauwe, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984).

In conclusion, we agree with the examiner that claims 3-6 are prima facie obvious and that the objective evidence fails to overcome the rejection of record. In our judgment, the evidence of nonobviousness presented by the appellants does not outweigh the evidence of obviousness of record.

For the foregoing reasons, the decision of the examiner is affirmed.

Additional matters

(1) If there is further prosecution of the merits in a continuation application, the primary examiner should evaluate whether claim 6 satisfies 35 U.S.C. § 112, second paragraph. Specifically, the examiner should note that claim 6, last two lines recite “wherein the amount of zinc-containing compound is no more than 0.25% by weight of the total weight of components B) C) and D).” No mention of B), C) and D) is made earlier in claim 6.

(2) In addition, in the event of further prosecution in a continuation application, we recommend that the examiner reevaluate the patentability of appellants’ claims in light of Mafoti, U.S. Patent No. 5,158,607.

As noted by appellants(brief, page 5),

.... Mafoti... discloses active hydrogen containing mixtures of a polyol, a chain extender containing amine groups or hydroxy groups, and an internal mold release (IMR) agent comprising an ester having an acid number of 15 or less (column 1, lines 31-46; column 4, line 35 through column 7, line 28; and claim 3 at column 11, lines 16-35). The use of these active hydrogen group containing mixtures in a RIM process is also disclosed.... (column 1, lines 32-35)

Mafoti also discloses the use of a three component catalyst system comprising a zinc salt, tin salts and tertiary amine. (see examples 6 and 7).

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The reevaluation should set forth an analysis of the claims and the prior art as required by Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (CCPA 1966) . See also MPEP 706.02(j) wherein it states:

...[A]fter indicating that the rejection is under 35 U.S.C. § 103, the examiner should set forth in the Office action (1) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line number(s) where appropriate, (2) the difference or differences in the claim over the applied reference(s), (3) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter, and (4) an explanation why one of ordinary skill in the art at the time the invention was made would have been motivated to make the proposed modification.

The examiner should also be mindful of Titanium Metals Corporation v. Banner 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985) wherein a claimed alloy having .3%Mo and .8%Ni was considered to have been prima facie obvious from two prior art alloys, the first containing .25% Mo and .75%Ni and the second containing .31% and .94%Ni. In that case, the court held that “the proportions are so close that prima facie one skilled in the art would have expected them [the claimed and prior art alloys] to have the same properties.”

(3) In view of our affirmance of claims 3-6 as unpatentable over Perry in view of Sweeney and our recommendation that the examiner evaluate in any continuation application the patentability of the appellants' claims in light of Mafoti, we additionally recommend that the examiner evaluate the patentability of claim 7 over the combined teachings of Perry and Sweeney as well as over Mafoti.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR section 1.136(a).

AFFIRMED

SHERMAN D. WINTERS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
MARY F. DOWNEY)	
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
)	
BRADLEY R. GARRIS)	
Administrative Patent Judge)	

MFD/pgg

Bayer Corporation
Patent Department
100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741