

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

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

Paper No. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte MARTIN BRAHM, GERHARD RUTTMANN  
AND LUTZ SCHMALSTIEG

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Appeal No. 2000-1147  
Application No. 08/706,551<sup>1</sup>

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ON BRIEF

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Before: McKELVEY, Senior Administrative Patent Judge, and SCHAFER and TIERNEY, Administrative Patent Judges.

TIERNEY, Administrative Patent Judge.

*Decision on Appeal*

This is an appeal under 35 U.S.C. §134 from the examiner's refusal to allow claims 10-20. We reverse the examiner's rejection of record.

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<sup>1</sup>Application for patent filed on September 6, 1996. This application claims benefit under 35 USC §119 of DE Application 19534162.7, filed September 15, 1995. The real party in interest is Bayer AG.

## I. Findings of Fact

### *The Invention*

The invention relates to a method for making a substantially solvent-free coating composition. The coating composition comprises a polyisocyanate component which contains heteroallophanate groups and an isocyanate-reactive component. (Appellants' specification, p. 1, lines 7-10). An object of the invention is the formation of blister-free coatings having good hardness. (Appellants' specification, p. 2, lines 13-16).

Appellants' method claims 10-16 and 18-19 and appellants' product claims 17 and 20 are said to form two separately patentable groups of claims for purposes of review. 37 CFR § 1.192(c)(7). (Brief, Paper No. 23, p. 3). Claims 10 and 17 are representative of appellants' claims on appeal and are reproduced below:

10. A method for making a blister-free coating comprising:

(1) applying a substantially solvent-free binder composition to a substrate, the solvent-free binder composition comprising:

a) a polyisocyanate component containing heteroallophanate groups and having aromatically-bound isocyanate groups,

i) an NCO content of 3 to 16% by weight based on the weight of the polyisocyanate component,

ii) an average functionality of 1.8 to 4,

iii) an allophanate group content (calculated as  $C_2HN_2O_3$ , MW: 101) of 5 to 35% by weight, based on the weight of the polyisocyanate component, wherein the allophanate groups are prepared from urethane groups that are the reaction product of a linear aliphatic diisocyanate having an isocyanate

group content of 30 to 60% by weight, based on the weight of the linear aliphatic diisocyanate, with a hydroxyl component having a hydrocarbon chain of 2 to 23 carbon atoms and an average functionality of less than 1.5 at an NCO/OH equivalent ratio of 1.0:1.0 to 0.5:1.0,

- iv) a hydrocarbon chain content of 10 to 65% by weight, based on the weight of the polyisocyanate component, wherein the hydrocarbon chains are attached to allophanate groups via oxygen and have an average of 2 to 23 carbon atoms and
- v) a distillable diisocyanate content of less than 0.5% by weight, based on the weight of the polyisocyanate component, and

b) an isocyanate-reactive component; and

(2) curing the composition.

17. The blister-free coating made by the method of Claim 10.

### *The References*

The prior art references of record relied upon by the examiner in rejecting the appealed claims

are:

|                               |           |               |
|-------------------------------|-----------|---------------|
| Windemuth et al., (Windemuth) | 3,769,318 | Oct. 30, 1973 |
| Hicks et al. (Hicks)          | 5,466,771 | Nov. 14, 1995 |

Windemuth is available as prior art under 35 U.S.C. § 102(b) and Hicks is available as prior art under 35 U.S.C. § 102(a).

### *The Windemuth Reference*

Windemuth describes a process for preparing allophanate polyisocyanates containing at least one bound -NCO group. (Windemuth, col. 1, lines 15-19). The allophanate polyisocyanates of Windemuth are free of secondary products having isocyanurate structures and are useful in the production of polyurethane plastics. (Windemuth, col. 1, lines 19-23). The products obtained by Windemuth's process are said to be suitable for the production of impregnations or coatings on substrates, protective paints or adhesives. (Windemuth, col. 8, lines 4-7).

#### *The Hicks Reference*

Hicks describes coating compositions that are said to have a long pot life and contain a polyisocyanate component and an aldimine component. (Hicks, col. 2, lines 13-33). The polyisocyanate component contains from 5 to 100% by weight of a monoallophanate. (Hicks, col. 2, lines 17-20).

## **II. Opinion**

The examiner has rejected claims 10-20 under 35 U.S.C. § 103 over Windemuth in view of Hicks. Appellants' dispute this rejection.

According to the examiner, Windemuth discloses the production of allophanate containing polyisocyanates having aromatically bound isocyanate groups. The examiner notes that Windemuth teaches the production of allophanate containing polyisocyanates having aromatically bound isocyanate groups wherein a polyisocyanate, such as an aliphatic isocyanate, is reacted with a hydroxyl function

compound to yield a urethane compound, which may then be reacted with an aromatic diisocyanate to yield the allophanate. (Examiner's Answer, Paper No. 24, p. 4).

The examiner acknowledges that Windemuth fails to disclose "extensive" details regarding the use of the allophanates in coating compositions. The examiner relies upon Hicks to remedy this alleged deficiency. Generally, the examiner cites Hicks for its teaching that allophanates can be combined with aldimines to form a binder for a coating composition. (Paper No. 24, p. 5).

Appellants' argue that the examiner has failed to establish a *prima facie* case of obviousness for the claimed invention. Appellants' contend that the Windemuth reference teaches the formation of an allophanate by reacting: (i) an n-substituted carbamic ester; (ii) an aromatically bound polyisocyanate; and (iii) a compound having an alkylating effect. (Paper No. 23, p. 4). According to appellants', Windemuth teaches that the n-substituted carbamic ester can be made from "any hydroxyl compound with equal success." (Paper No. 23, p. 4, citing Windemuth, col. 3, lines 22-28). Furthermore, appellants' direct our attention to Windemuth's teaching that the reaction of the hydroxyl group-containing compounds with the isocyanates may be carried out at an NCO:OH ratio of less than, equal to, or greater than 1. (Paper No. 23, p. 4, citing Windemuth, col. 4, lines 24-29).

In establishing a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970) ("All words in a claim must be considered in judging the patentability of that claim against the prior art."). Furthermore, any motivation to modify the prior art references must flow from some teaching in the art that suggests the desirability or incentive to make the modification needed to arrive at the claimed invention. *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d

1782, 1784 (Fed Cir. 1995); *In re Gorman*, 933 F.2d 982, 986-87, 18 USPQ2d 1885, 1888, (Fed. Cir. 1991) (“When it is necessary to select elements of various teachings in order to form the claimed invention, we ascertain whether there is any suggestion or motivation in the prior art to make the selection made by the applicant. [Citations omitted] ... The extent to which such suggestion must be explicit in, or may be fairly inferred from, the references, is decided on the facts of each case in the light of the prior art and its relationship to the applicants’ invention.”).

The examiner states that the Windemuth reference renders appellants’ allophanate component “prima facie” obvious. (Paper No. 24, p. 5). Yet, appellants’ claims require, among other things, the following proportions and properties:

- (i) an NCO content of from 3 to 16% by weight;
- (ii) an average functionality of 1.8 to 4;
- (iii) an allophanate group content of from 5 to 35% by weight, and an average functionality of less than 1.5 at an NCO/OH equivalent ratio of 1.0:1.0 to 0.5:1.0;
- (iv) a hydrocarbon chain content of 10 to 65% by weight;
- (v) a distillable diisocyanate content of less than 0.5% by weight.

(See, for example, appellants’ claim 10). The examiner has failed to sufficiently identify where these proportions and properties are taught or suggested by the cited prior art references. Nor are we able to surmise the exact nature of the teaching or suggestion that is allegedly provided by the prior art that would reasonably lead one skilled in the art to appellants’ claim invention.

The decision of the examiner to reject claims 10-20 under 35 U.S.C. § 103 over Windemuth in view of Hicks is reversed.

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

**REVERSED**

|                                    |   |                 |
|------------------------------------|---|-----------------|
| FRED E. McKELVEY                   | ) |                 |
| Senior Administrative Patent Judge | ) |                 |
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|                                    | ) |                 |
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|                                    | ) | BOARD OF PATENT |
| RICHARD E. SCHAFER                 | ) | APPEALS         |
| Administrative Patent Judge        | ) | AND             |
|                                    | ) | INTERFERENCES   |
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|                                    | ) |                 |
|                                    | ) |                 |
| MICHAEL P. TIERNEY                 | ) |                 |
| Administrative Patent Judge        | ) |                 |

MT:yt  
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