

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte MOHAMAD D. SHALATI, JAMES A. MARQUART,  
JOHN R. BABJAK and RODNEY M. HARRIS

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Appeal No. 1996-0438  
Application 08/090,343

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ON BRIEF

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Before KIMLIN, GARRIS and WALTZ, Administrative Patent Judges.  
KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 26-29 and 34-37. Claims 30-32, the other claims remaining in the present application, have been allowed by the examiner.

Claim 26 is illustrative:

26. A curable composition which comprises:

(i) an anhydride-functional compound having an average of at least two cyclic carboxylic acid anhydride groups per molecule; and



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5,227,243, which is a continuation of U.S. Serial No.  
07/120,887, filed November 16, 1987, now abandoned. An appeal  
was taken to

this board in the grandparent application, and in a decision  
dated January 22, 1991 (Appeal No. 90-2577) a merits panel of  
the board affirmed the examiner's rejection under 35 U.S.C. §  
103 over an Australian patent that is essentially the same in  
its disclosure as the European patent to Horley presently  
applied by the examiner. While the appealed claims in the  
grandparent application defined compositions comprising both  
polyepoxides and monoepoxides, the claims of the present  
invention recite only a monoepoxide component.

Appellants submit at page 3 of the principal brief that  
"claims 26-29 and 34-37 should stand or fall together."  
Accordingly, all the appealed claims stand or fall together  
with claim 26.

Appealed claims 26-29 and 34-37 stand rejected under 35  
U.S.C. § 103 as being unpatentable over Horley in view of  
Heilman.

We have thoroughly reviewed each of appellants' arguments

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for patentability. However, we are in complete agreement with the examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will

sustain the examiner's rejection for essentially those reasons expressed in the answer, and we add the following primarily for emphasis.

There is no dispute that Horley, like appellants, discloses compositions which are curable at room temperature comprising the presently claimed components (i) anhydride-functional compound and (iii) hydroxy-functional compound. The third component of Horley's composition is a compound containing at least two epoxide groups rather than the monoepoxide of the appealed claims. However, we agree with the examiner, especially in light of the Heilman disclosure, that it would have been prima facie obvious for one of ordinary skill in the art to substitute some of the polyepoxide of Horley with a monoepoxide in order to increase

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the fluidity of the resin mixture.

The principal argument advanced by appellants is that Heilman specifically requires, at column 7, line 58 - column 8, line 15, that "the composition utilized by Heilman be free of hydroxy-functional materials!" Based on this disclosure, appellants contends that "[o]ne skilled in the art would recognize that Heilman specifically teaches away from incorporation of hydroxyl functional materials and would not be motivated to utilize Heilman's blends of polyepoxide and monoepoxide as a replacement for the polyepoxide in the European patent (Horley) which requires the presence of active hydrogen containing materials such as hydroxyl groups" (sentence bridging pages 3 and 4 of appellants' response of April 3, 1995).

We are not persuaded by appellants' arguments for several reasons. First, as noted by the examiner, Heilman teaches that it is essential for the shelf life of the intermediate composition that the presence of active hydrogen be minimized and, significantly, further teaches that active hydrogen atoms, as found in hydroxyl groups, induce the anhydride

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epoxide reaction, especially so in the presence of the anhydride accelerators (column 7, lines 58 et seq.) Accordingly, it would have been obvious for one of ordinary skill in the art to exclude hydroxyl groups in forming the intermediate composition, but to include hydroxyl-containing compounds in the composition when curing is desired. The composition of the appealed claims and that disclosed by Horley are not intermediate compositions, but those which cure at ambient conditions.

Secondly, the issue is not whether it would have been obvious to one of ordinary skill in the art to include a hydroxy-

containing compound in the composition of Heilman, but, rather, whether it would have been obvious to substitute a monoepoxide, including in minor amounts, for the polyepoxide of Horley. Appellants have presented no reason why the substitution of a minor amount of monoepoxide for the polyepoxide of Horley would have been unobvious to one of ordinary skill in the art, particularly for the purpose of

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increasing the fluidity of the resin mixture. Significantly, we find that appealed claim 26 encompasses compositions which comprise a major amount of a polyepoxide and a minor amount of a monoepoxide. This is so because page 15 of appellants' specification expressly discloses that "[t]he epoxy compounds can be monoepoxies, or, preferably, a polyepoxide having an average of at least two epoxy groups per molecule." (emphasis added.) Since the specification discloses that a polyepoxide is preferable to a monoepoxide, it is reasonable to interpret claim 26, by virtue of the "comprises" language, as embracing a major amount of the preferred polyepoxide and a minor amount of the non-preferred monoepoxide. While appellants maintain that "Heilman teaches only limited

application of the monoepoxide" (page 4 of appellants' response of April 3, 1995), the appealed claims encompass compositions comprising limited, or minor, amounts of a monoepoxide. Also, since Heilman teaches that "the incorporation of a monoepoxy diluent may reduce the cross-

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linked density with a concomitant modification of properties of the fully cured resin" (column 8, lines 16 et seq.), we are satisfied that one of ordinary skill in the art would have found it obvious to determine the optimum amount of monoepoxide to substitute for the polyepoxide component of Horley. Moreover, in view of the fact that the number of epoxy groups was a known result-effective variable which determines the cross-linked density of the cured resin, we are convinced that it would have been obvious for one of ordinary skill in the art to do what appellants have done, namely, replace the preferred polyepoxide component with a certain amount of non-preferred monoepoxide in accordance with the target density of the cured resin.

As a final point, we note that appellants base no argument upon objective evidence of nonobviousness, such as unexpected results.

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

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

AFFIRMED

EDWARD C. KIMLIN	)	
Administrative Patent Judge	)	
	)	
	)	
BRADLEY R. GARRIS	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
THOMAS A. WALTZ	)	
Administrative Patent Judge	)	

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