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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RUDOLF SCHIPFER
and GERHARD SCHMOLZER

Appeal No. 94-2211
Application 07/673,690[1]

HEARD: October 15, 1996

Before JOHN D. SMITH, GARRIS and THIERSTEIN, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the final rejection of claims 1 through 9, which are all of the claims in the application.

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[1] Application for patent filed March 22, 1991.

The subject matter on appeal relates to a process for the preparation of cationic binders based on modified epoxy resin-amine adducts comprising reacting an epoxy resin component consisting of at least one diepoxy resin and at least one epoxide compound which is modified by N-substituted mono-and/or bis-2-oxazolidone groupings with an amine component to thereby obtain the aforementioned adducts. The appealed subject matter also relates to the cationic binders made by this process and to the use of the cationic binders in cathodic electrodeposition coatings. The subject matter is adequately illustrated by independent claim 1, a copy of which taken from the appendix of the main brief is appended to this decision.

The references relied upon by the examiner as evidence of obviousness are:

Clarke	3,876,618	Apr. 8, 1975
Schipfer et al. (Schipfer)	4,992,516	Feb. 12, 1991

Claims 1 through 9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Schipfer in view of Clarke. In the paragraph bridging pages 4 and 5 of the answer, the examiner expresses his position as follows:

> Therefore it would have been obvious to one skilled in the art to use the process found in Schipfer to make a cathodic composition (as disclosed) and to further modify the composition by the addition of an oxazolidinone-modified epoxy component as found in Clarke to improve the physical properties (which is the applicants' intent/motivation). Although the Clarke reference does not specifically teach improvement of

> corrosion protection on the edges of the workpieces, it does teach outstanding physical properties for protective purposes on metal substrates, see column 1 and example 4. The examiner's position is that, although the disclosure of Clarke is somewhat vague as toward the specific types of physical properties improved, the reference inherently encompass applicants' intended improvements, wherein no unexpected results are believed to be obtained.

We cannot sustain this rejection.

Schipfer discloses cathodically depositable paint binders based on epoxy resin-amine adducts. From our perspective, the applied references contain no teaching or suggestion "to further modify the composition [of Schipfer] by the addition of an oxazolidinone-modified epoxy component as found in Clarke to improve the physical properties" as proposed by the examiner. As correctly indicated by the appellants, the oxazolidinone-modified resins of Clarke are not disclosed in the context of a cathodically depositable paint binder with which Schipfer is concerned. This is particually significant in that Schipfer teaches that such cathodically depositable binder systems must possess contradictory properties and divergent requirements (e.g., see lines 14 through 24 in column 1 and lines 58 through 62 in column 2). Accordingly, there appears to be merit in the appellants' argument that the problem and solution of Clarke are different from the problem and solution of Schipfer and of the here-claimed invention.

For these reasons, it is our opinion that one having ordinary skill in the art would have had little if any expectation that "the addition of an oxazolidinone-modified epoxy component as found in Clarke ... [would successfully] improve the physical properties [of Schipfer's cathodically depositable paint binders]" as urged by the examiner. In re O'Farrell, 853 F.2d 894, 904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988) (for obviousness under Section 103, a reasonable expectation of success is required). Stated otherwise, the applied reference teachings would not have led an artisan with ordinary skill to react an epoxide compound modified by oxazolidone groupings with amine components based upon a reasonable expectation of successfully obtaining cathodic binders based on modified epoxy resin-amine adducts as required by the appealed claims.

In addition to the foregoing, we note that the appellarts have proffered data (see page 37 of the subject specification) which reflects that the addition of an epoxide compound modified by oxazolidone groupings to cathodic binder systems of the type under consideration results in a significant reduction in edge corrosion relative to a cathodic binder system of the type taught by Schipfer. The examiner has conceded that "the Clarke reference does not specifically teach improvement of corrosion

protection on the edges of the workpieces" (answer, page 4). Nevertheless, the examiner has dismissed the specification data as unpersuasive because the appellants have "not shown an oxazolidinone-modified epoxy resin composition [i.e., the type taught by Clarke] alone, along with its properties, to determine if the results obtained by the present invention are unexpected" (answer, page 5).

We share the appellants' view that such a showing is not required. It is well settled that an applicant relying upon a comparative showing to rebut a prima facie case of obviousness must compare his claimed invention with the closest prior art. In re Merchant, 575 F.2d 865, 869, 197 USPQ 785,788 (CCPA 1978). In the case at bar, there is no question but that the prior art of Schipfer is significantly closer to the here-claimed invention than is the prior art of Clarke. It is apparent, therefore, that the comparative showing proffered by the appellants is relevant to the issue of unexpected results whereas the comparative showing suggested by the examiner is not. In this latter regard, we emphasize that the Clarke reference contains no teaching of corrosion reduction as conceded by the examiner.

Under these circumstances, we consider the appellants' specification data to possess at least some degree of probative

value as indicia of nonobviousness in the form of unexpected results. When this evidence of nonobviousness is compared with the reference evidence advanced by the examiner in support of his nonobviousness conclusion, the entirety of the evidence of record, on balance, clearly weighs in favor of a conclusion of nonobviousness relative to the here-claimed invention. In re Merchant, 575 F.2d at 868, 197 USPQ at 787. It follows that we cannot sustain the examiner's Section 103 rejection of claims 1 through 9 as being unpatentable over Schipfer in view of Clarke.

The decision of the examiner is reversed.

REVERSED

JOHN D. SMITH
Administrative Patent Judge)

BRADLEY R. GARRIS
Administrative Patent Judge) BOARD OF PATENT APPEALS AND INTERFERENCES

JOAN THIERSTEIN
Administrative Patent Judge)

Appeal No. 94-2211
Application 07/673,690

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APPENDIX

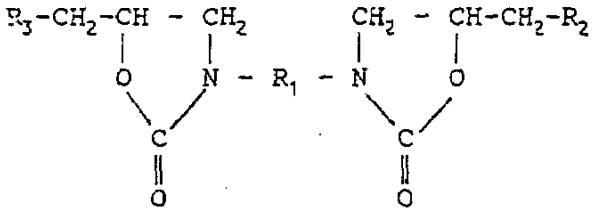
CLAIM 1

1. Process for the preparation of cationic binders based on modified epoxy resin-amine adducts comprising reacting -

(A) 60 to 80% by weight of an epoxy resin component consisting of

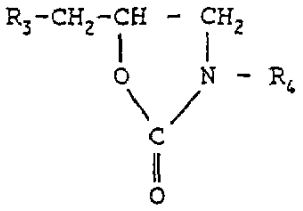
(Aa) 60 to 98% by weight of at least one aromatic and/or aliphatic diepoxy resin having an epoxide equivalent weight of between 190 and 500, and

(Ab) 2 to 40% by weight of at least one epoxide compound which is modified by N-substituted mono- and/or bis-2-oxazolidone groupings, which are obtained by reaction of glycidyl groups with isocyanate groups, and having the general formula -



(I)

or



(II)

wherein

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R_1 represents the moiety of a (cyclo)aliphatic or an aromatic diisocyanate,

R_2 represents the moiety of an aliphatic monoglycidyl ether or an aliphatic monoglycidyl ester or a radical R_3,

R_3 represents the moiety of an (aromatic)-aliphatic or aromatic diglycidyl ether, and

R_4 represents the moiety of a (cyclo)aliphatic or an aromatic monoisocyanate,

with

(B) 20 to 40% by weight of an amine component consisting of

(Ba) 0 to 20% by amine equivalence of at least one primary alkylamine and/or alkanolamine,

(Bb) 25 to 55% by amine equivalence of at least one secondary alkylamine and/or alkanolamine,

(Bc) 20 to 50% by amine equivalence of at least one primary-tertiary alkyldiamine, and

(Bd) 5 to 25% by amine equivalence of a disecondary amine compound of 2 mol of a compound resulting from the reaction product of diprimary di- or polyamines with aliphatic monoglycidyl and/or monoepoxide compounds with one mol of a diepoxide compound,

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wherein the totals of the percentage figures of components A and B equals 100 to give an adduct which is free from epoxide groups and has a molecular weight of from about 2000 - 18,000 (weight-average), a glass transition temperature of between +20°C and +45°C, and a basicity corresponding to an amine number of at least 20 mg KOH/g, with the proviso that the epoxy resin components (Aa) and (Ab) of component A are reacted with the amine components (Ba), (Bb), (Bc) and (Bd) of component B at 60°C to 80°C in a 55-75% strength partial solution in glycol ethers, and that after the end of all the additions, the reaction temperature is increased to a maximum of 120°C to bring the reaction to completion.