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D E C I S I O N
of 6 June 2002

Case Number: T 0689/97 - 3.3.7

Application Number: 91200570.9

Publication Number: 0448163

IPC: C09D 7/14

Language of the proceedings: EN

Title of invention:

Method for stabilizing lacquers and coatings, and the
stabilized compositions obtained

Applicant:

Great Lakes Chemical (Europe) GmbH

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 84
EPC R. 29(4)

Keyword:

"Clarity (no) - inconsistency between an independent claim and
claims drafted as dependent thereon"

Decisions cited:

-

Catchword:

-



Case Number: T 0689/97 - 3.3.7

D E C I S I O N
of the Technical Board of Appeal 3.3.7
of 6 June 2002

Appellant: Great Lakes Chemical (Europe) GmbH
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Representative: Fusina, Gerolamo
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 9 January 1997
refusing European patent application
No. 91 200 570.9 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: R. E. Teschemacher
Members: B. J. M. Struif
B. L. ter Laan

Summary of Facts and Submissions

I. European patent application No. 91 200 570.9 was filed on 16 March 1991 and published as EP-A1-0 448 163. The examining division decided to refuse the application on the basis of three amended claims as the sole request in view of *inter alia* the following documents:

D1: US-A-4 730 017

D4: EP-A-0 343 717

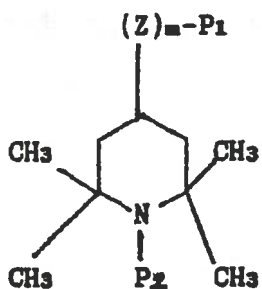
The decision was based on the following reasons:

- (a) Since the main request was considered to contain subject-matter which extended beyond the content of the application as originally filed, it did not comply with Article 123(2) EPC.
- (b) The claimed subject-matter did not involve an inventive step when starting from D4 as the nearest prior art document in view of D1.

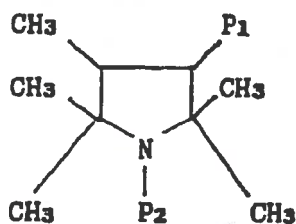
II. The applicant (appellant) filed a notice of appeal against the above decision on 30 January 1997 and paid the respective fee simultaneously. With the statement of grounds of appeal received on 18 April 1997 the appellant submitted amended claims 1 to 6 as the sole request, which corresponded to the set of claims filed by letter of 28 February 1994. Claim 1 reads as follows:

"A method for stabilizing acrylic or alkyd resin and polyester based lacquers and coatings, comprising mixing the substance concerned with at least one compound containing at least one sterically hindered piperidino, morpholino or pyrrolidino group, and at

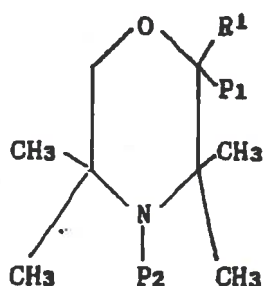
least one silyl function, wherein the stabilizing compound is chosen from those containing at least one of the compounds corresponding to the following formulas:



IV

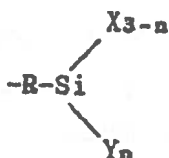


V



VI

where: m is zero or one; R¹ is hydrogen or methyl; Z is a group chosen from -O-; -NH-; -NR''- (where R'' is a C₁-C₅ linear or branched alkyl radical); at least one of P₁ and P₂ is a radical of formula:



VII

where n is 1, 2 or 3; R is a C₁-C₁₀ linear or branched alkylene radical, or can be represented by

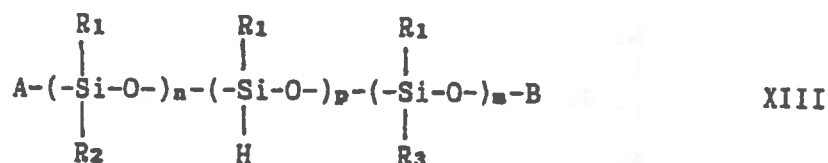


(where R^{III} and R^{IV} are linear or branched alkylene radicals containing together between 2 and 10 carbon atoms); X is a C₁-C₅ linear or branched alkyl radical; Y is hydrogen, halogen, (C₁-C₄) acyloxy, (C₁-C₄) alkyloxy, amino, amino-oxy or silyloxy; the other of P₁ and P₂ being:

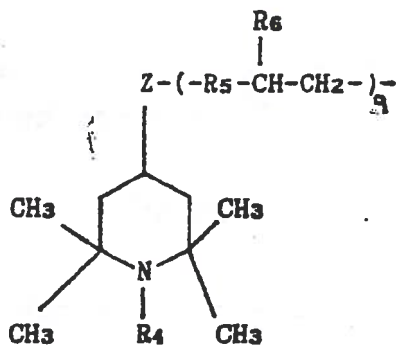
- a) a C₁-C₁₀ linear or branched alkyl radical; or
- b) a phenyl, cycloaliphatic, alkylphenyl or alkylcycloaliphatic radical, and wherein the stabilizing compound is used in a quantity of between 0.01 and 5% by weight on the base compound of the lacquer or coating concerned."

Claims 2 to 4 read as follows:

"2. A method for stabilizing lacquers and coatings as claimed in claim 1, characterised in that the piperidino group is contained in a polysiloxane structure definable by the formula:

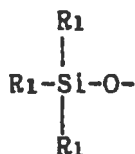


where R_1 and R_3 , which can be the same or different, are C_1 - C_{10} linear or branched alkyl radicals, or C_5 - C_{11} cycloaliphatic radicals, or phenyl radicals; R_2 is a radical chosen from those of formula:



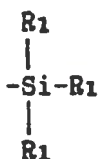
XIV

where R_4 is hydrogen, methyl or benzyl; R_5 is a C_1 - C_7 linear or branched alkylene radical; Z is a group chosen from $-O-$ and $-NR_7-$ (where R_7 is a C_1 - C_5 linear or branched alkyl group or hydrogen); R_6 is hydrogen or methyl; q is zero or one; n is a whole number; m , p , which can be equal or different, are zero or whole numbers, with the condition that $(n+p+m)$ is a whole number ≤ 50 ; A is a group of formula:



XV

where R_1 has the aforesaid meaning; B is a group of formula:



XVI

where R_1 has the aforesaid meaning; or A and B together represent a direct bond, to give rise to a cyclic structure."

"3. A method for stabilizing lacquers and coatings as claimed in claim 1, wherein the stabilizing compound is preferably chosen as one or more of those corresponding to formulas VIII to XII."

"4. A method for stabilizing lacquers and coatings as claimed in claim 2, wherein the stabilizing compound is preferably chosen as one or more of those corresponding to formulas XVII to XXIII."

Claim 5 refers to a preferred embodiment of claim 1.

Claim 6 reads as follows:

"An acrylic or alkyd resin and polyester based lacquer or coating composition stabilized by adding at least one compound containing at least one sterically hindered piperidino, morpholino or pyrrolidino group, and at least one silyl function, chosen from those corresponding to the formulation of claim 1."

- III. The arguments of the appellant given in writing only referred to inventive step.
- IV. In a communication of 14 March 2002, the Board expressed a preliminary view on the clarity of claims 1 to 4 and on the inventive step of the claimed subject-matter. In particular, with respect to clarity, the improper dependence of claim 2 (piperidino compounds with polysiloxane structure defined by formula XIII) on compounds of formula IV of claim 1 was objected to. Furthermore, it was noted that the definition of the structures of the compounds having formulae VII to XII and XVII to XXII, respectively, was lacking.

As regards inventive step, in particular the objection was raised that no selection invention was apparent over D4.

- V. By letter of 22 April 2002, the appellant announced that he would not be present at the oral proceedings arranged for 6 June 2002 and that he relied on his previous written submissions. No comments regarding the clarity for the amended claims were given.
- VI. The oral proceedings were held on 6 June 2002 in the absence of the appellant as announced, according to Rule 71(2) EPC.
- VII. The appellant requested in writing that the appeal be set aside and that the patent be granted on the basis of claims 1 to 6 filed on 18 April 1997.

Reasons for the Decision

1. The appeal is admissible

Clarity of the sole request

2. Although claim 2 refers back to claim 1 there is no proper dependence between claim 1 and 2 due to the different definitions with respect to formula IV on the one hand and formulae XIII and XIV on the other hand. In particular, the board notes the following inconsistencies:
- 2.1 In claim 1 the at least one P_1 and P_2 , representing the silyl function of the piperidino compound of formula IV, is a radical of formula VII. In formula VII, R is a C_1 - C_{10} linear or branched alkylene radical, or can be represented by



(where R^{III} and R^{IV} are linear or branched alkylene radicals containing together between 2 and 10 carbon atoms), X is a C_1-C_5 linear or branched alkyl radical and Y is hydrogen, halogen, (C_1-C_4) acyloxy, (C_1-C_4) alkyloxy, amino, amino-oxy or silyloxy. Thus, in formula VII, the group X is bonded to the Si-atom to which the piperidino containing group, through R , is also bonded.

In claim 2 the piperidino containing group R_2 having formula XIV is contained in a polysiloxane structure defined by formula XIII. In formula XIII the Si-atom to which the piperidino containing group R_2 is bonded, is also bonded to the group R_1 which can be a C_1-C_{10} linear or branched alkyl radical, or C_5-C_{11} cycloaliphatic radical, or phenyl radical. Thus, the definition of the substituent X_1 in claim 1 is not consistent with the broader definition of R_1 in claim 2.

2.2 According to claim 1, the stabilizing compounds are chosen *inter alia* from piperidino compounds of formula IV, in which P_2 is the substituent at the nitrogen atom and at least one of P_1 and P_2 is the radical of formula VII, the other of P_1 and P_2 being

- (a) a C_1-C_{10} linear or branched alkyl radical; or
- (b) a phenyl, cycloaliphatic, alkylphenyl or alkylcycloaliphatic radical.

Thus, in claim 1 the definition of the radical P_2 at the nitrogen atom of the piperidino ring does not cover hydrogen.

According to the broadest definition of the invention in the description as filed, page 1, lines 7 and 8, the method "... concerned at least one compound containing an N-substituted, sterically hindered piperidino, morpholino or pyrrolidino group, and at least one silyl function-", which definition is in line with that of amended claim 1 covering only N-substituted compounds. However, in claim 2, which is drafted as dependent on claim 1, the piperidino structure is defined by formula XIV which is part of the siloxane structure having formula XIII, wherein the radical R_4 at the nitrogen atom of the piperidino ring is hydrogen, methyl or benzyl. Hence, the definition of the substituent P_2 in claim 1 is not consistent with that of R_4 in claim 2.

2.2.1 Moreover, piperidino compounds non substituted at the nitrogen atom are illustrated by some of the preferred compounds having formula XVIII, XX to XXIII (pages 7 to 9). Thus, the description is not only inconsistent in itself but also with the claims as amended.

2.3 Furthermore, according to claim 1, the group -R-, which can be *inter alia* a C_1 - C_{10} linear or branched alkylene radical, is part of the silyl radical of formula VII and is obligatorily present in the claimed stabilizer compound. According to claim 2, the corresponding alkylene group in formula XIV is defined as $(-R_5-CHR_6-CH_2-)_q$, where q is zero or one, and thus it can also be absent. Therefore, the obligatory presence of -R- in claim 1 is not consistent with the definition of q in claim 2.

2.4 In view of the above, the definition of the claimed subject-matter in claim 1 and "dependent" claim 2 is contradictory and an appropriate basis for assessing the extent of protection is, therefore, lacking. Consequently, the claimed subject matter for which

protection is sought, is not clearly defined and does not enable the protection conferred by the patent to be determined.

- 2.5 In claims 3 and 4 the definitions of the structures of the compounds having formulae VIII to XII and XVII to XXII, respectively are lacking. The definition in the claims as such should be clear and a definition present only in the description is not sufficient in this respect (Rule 29(6) EPC).
- 2.6 The appellant has not made any attempt to remedy the above deficiencies which had been addressed in the board's communication.
- 2.7 From the above reasons it follows that the claims do not meet the requirements under Article 84 and Rule 29(4) and (6) EPC so that the sole request must fail.

Inventive step

3. In view of the deficiencies under Article 84 EPC indicated above there is no basis on which inventive step can be discussed. Furthermore, it is not apparent in which way the objections under Article 56 EPC addressed in the board's communication could be overcome.

Order

For these reasons it is decided that:


The appeal is dismissed.

The Registrar:

The Chairman:



C. Eickhoff



R. Teschemacher