

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [X] To Chairmen
(D) [] No distribution

**Datasheet for the decision
of 17 April 2013**

Case Number: T 1869/10 - 3.3.06

Application Number: 99918177.9

Publication Number: 1089809

IPC: B01F 17/34, C08G 63/02,
C08G 63/20, C08G 18/42,
C09D 7/02, C09D 11/00,
C09D 17/00

Language of the proceedings: EN

Title of invention:
Polyurethane dispersants

Patent Proprietor:
The Lubrizol Corporation

Opponent:
BYK-Chemie GmbH

Headword:
Polyurethane dispersants/LUBRIZOL

Relevant legal provisions:
EPC Art. 108, 123(2)
RPBA Art. 12(2), 13(1)

Relevant legal provisions (EPC 1973):
EPC Art. 54(1)(2), 114

Keyword:

"Admissibility of the appeal: yes"

"Novelty (main request): no"

"Admissibility of auxiliary requests 1 to 3: yes"

"Added subject-matter (auxiliary requests 1 to 3): yes"

"Admissibility of auxiliary request 4 (no): unjustified filing of an auxiliary request during oral proceedings"

Decisions cited:

T 0809/06, T 1634/09, T 0443/10

Catchword:

-



Case Number: T 1869/10 - 3.3.06

DECISION
of the Technical Board of Appeal 3.3.06
of 17 April 2013

Appellant: The Lubrizol Corporation
(Patent Proprietor) 29400 Lakeland Boulevard
Wickliffe, Ohio 44092-2298 (US)

Representative: Mallalieu, Catherine Louise
D Young & Co LLP
120 Holborn
London EC1N 2DY (GB)

Respondent: BYK-Chemie GmbH
(Opponent) Abelstraße 45
D-46483 Wesel (DE)

Representative: Leifert, Elmar
Leifert & Steffan
Patentanwälte
Postfach 10 40 09
D-40031 Düsseldorf (DE)

Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
13 July 2010 concerning maintenance of the
European patent No. 1089809 in amended form.

Composition of the Board:

Chairman: P. Ammendola
Members: L. Li Voti
U. Tronser

Summary of Facts and Submissions

- I. The present appeal is from the decision of the Opposition Division to maintain in amended form the European patent no. 1 089 809, concerning polyurethane dispersants.
- II. In its notice of opposition the Opponent sought the revocation of the patent on the ground of Article 100(a) EPC 1973, because of lack of novelty and inventive step of the claimed subject-matter.

The following documents were cited *inter alia* during the opposition proceedings:

- (7): R.F. Storey et al., Journal of Polymer Science: Part A: Polymer Chemistry, vol. 29 (1991), 1759-1777, "Hydroxy-Terminated Poly(ϵ -Caprolactone-co- δ -Valerolactone) Oligomers: Synthesis, Characterization, and Polyurethane Network Formation";
- (8): EP-A-713894.

- III. The Opposition Division found in its decision that claim 1 as granted lacked novelty over documents (7) and (8). However, claim 1 according to the then pending auxiliary request 1 complied with all the requirements of the EPC.
- IV. An appeal was filed against this decision by the Patent Proprietor (Appellant).

The Appellant requested that the decision under appeal be set aside and the opposition be rejected or that the

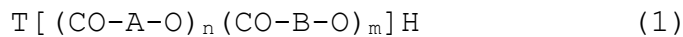
patent be maintained on the basis of one of the auxiliary requests 1 to 3 submitted with the letter dated 25 March 2013 or on the basis of auxiliary request 4 submitted during oral proceedings.

The Respondent (Opponent) requested that the appeal be dismissed.

V. Claim 1 of the **patent as granted** reads as follows:

"1. A dispersant comprising the addition reaction product of a polyisocyanate having an average functionality of from 2 to 10 and one or more poly (oxyalkylenecarbonyl) chains (POAC chain) derivable from two or more different hydroxy carboxylic acids or lactones thereof, including their salts, and wherein the hydroxy carboxylic acids or lactones thereof contain a C₁₋₆-alkylene group."

Claim 1 according to the **auxiliary request 1** differs from claim 1 as granted insofar as it specifies that the POAC chain is obtainable from one or more alcohols of formula 1



wherein

T is a chain terminating group derived from a C₁₋₃₅ monohydric alcohol or phenol;

A and B are different C₁₋₆-alkylene;

n and m are integers; and

n + m is from 2 to 200.

Claim 1 according to the **auxiliary request 2** differs from claim 1 according to auxiliary request 1 only insofar as it specifies that the lactone is δ -valerolactone and ϵ -caprolactone.

Claim 1 according to the **auxiliary request 3** differs from claim 1 according to auxiliary request 1 insofar as it specifies that each polyisocyanate contains one or more POAC chains provided that there remain two isocyanate groups which are not reacted with the POAC chain, one of which isocyanate groups is reacted with a cross-linker and the other of which is reacted with a modifier; wherein the cross-linker is a compound of formula 2



wherein

E is OH, NH₂ or NH R;

D is an aliphatic, cycloaliphatic and/or aromatic group having a molecular weight of not greater than 3000 and which contains two or more carbon atoms and may contain ether, thioether, ester (i.e. OCO), amide, urethane, sulphone or -Si(CH₃)₂O- groups; R is C₁₋₈-alkyl; and p is 2 or 3,

and wherein the modifier is of formula Z-Q wherein

Q is hydroxy, amino, NHR¹ or SH;

R¹ is C₁₋₈-alkyl; and

Z is an aliphatic group with from 2 to 10 carbon atoms containing at least one tertiary amino group or a heterocyclic group containing at least one basic ring nitrogen atom which contains no hydrogen atom and where

the heterocyclic group may be attached to Q by an alkylene group containing up to 10 carbon atoms,

or

wherein the modifier is a compound of formula K-L or K-NH-K wherein

L is OH, NH₂, NHR² or SH;

R² is C₁₋₄-alkyl; and

K is an aliphatic, cycloaliphatic or aromatic residue having at least one acidic functional group and/or at least one OH group and/or at least one -Si(OR³)_t(R⁴)_{3-t}-group; R³ and R⁴ is C₁₋₁₀-alkyl; and t is from 1 to 3.

Claim 1 according to the **auxiliary request 4** differs from claim 1 according to auxiliary request 2 insofar as it specifies that T is a chain terminating group derived from a C₁₋₃₅ monohydric alcohol.

VI. The Appellant submitted in essence that

- the appeal was admissible;

- claim 1 as granted was novel over the cited documents; in particular, the cross-linked networks disclosed in document (7) were films suitable for medical application, which were insoluble in solvents used, for example, in the preparation of paints; therefore, they were unsuitable as dispersants;

- claim 1 of the auxiliary requests 1 to 3 complied with the requirements of Article 123(2) EPC;

- the auxiliary request 4 had been filed as a reply to the objection raised by a third party on 19 February 2013 concerning the meaning of the radical T of formula (1); moreover, the amendment carried out in claim 1 was very simple and easy to understand and could have been expected by the Respondent; therefore, this request was admissible.

VII. The Respondent submitted *inter alia* that

- the appeal was inadmissible since the substantiation of the grounds appeal was limited to the discussion of the novelty of the claimed subject-matter and did not address inventive step (see decision T 809/06);

- the auxiliary requests 1 to 4 were late filed and should not be admitted; in particular, as regards the auxiliary request 4, the objection by a third party indicated by the Appellant as the reason for filing such a request during oral proceedings had been already raised by the Respondent in its reply of 6 April 2011 to the grounds of appeal; therefore, such a request could and should have been filed much earlier in the proceedings;

- the cross-linked polymers disclosed in document (7) contained all the features of the dispersant of granted claim 1; moreover, claim 1 did not contain any limitation as to the solubility of the claimed polymeric dispersant in a specific solvent and it had not been made credible by the Appellant that the cross-linked networks of document (7) were insoluble in all possible solvents used for preparing, for example, paints; furthermore, the method of preparation of such

cross-linked polymers disclosed in document (7) led to the formation of intermediate films consisting of a polymeric addition product of polyisocyanate and POAC, which addition product was, before curing, soluble in a solvent and certainly suitable as a dispersant; therefore, claim 1 as granted lacked novelty;

- claim 1 according to the auxiliary requests 1 to 3 did not comply with the requirements of Article 123(2) EPC.

As regards the auxiliary requests, the Respondent raised in writing several additional objections with respect to the clarity of the claims, their compliance with the requirements of Articles 123(2) and (3) EPC, insufficiency of disclosure, lack of novelty and lack of inventive step.

Reasons for the Decision

1. Admissibility of the appeal

In the substantiation of the grounds of appeal, filed with the letter of 23 November 2010, the Appellant has explained why it considered the finding of the Opposition Division that claim 1 of the main request lacked novelty to be incorrect.

The appeal thus has been substantiated with respect to the only ground submitted by the Opposition Division against the allowability of the main request and complies also with Article 12(2) RPBA, requiring that the statement of the grounds of appeal shall set out clearly and concisely the reasons why it is requested

that the decision under appeal be reversed or amended and should specify all the facts, arguments and evidence relied on.

In the decision T 809/06, cited by the Respondent, the Board charged with that case stated that if the Appellant submits that the decision under appeal is incorrect, the statement setting out the grounds of appeal must enable the Board to understand immediately why the decision is alleged to be incorrect and on what facts the Appellant bases its arguments, without first having to make investigations of their own (see point 2 of the reasons). This requirement has been complied with also in the present case, as already explained above. Moreover, the Board stated that the statement of the grounds of appeal should not contain a mere assertion that the findings of the decision under appeal are not correct but it should give reasons or arguments as to why the finding of the decision under appeal is challenged (see point 3 of the reasons). This requirement has also been complied with in the present case.

The fact that the Appellant did not explain why the claims of the submitted requests should involve an inventive step thus is not prejudicial, in the present case, to the admissibility of the appeal.

The Board concludes that the appeal is admissible.

2. *Main request (patent as granted)*

2.1 Novelty

2.1.1 Claim 1 of the main request is directed to a dispersant comprising the addition reaction product of a polyisocyanate having an average functionality of from 2 to 10 and one or more POAC chains derivable from two or more different hydroxy carboxylic acids or lactones thereof containing a C₁₋₆-alkylene group. Therefore, said addition reaction product can be itself a dispersant, i.e. a product suitable for dispersing a particulate solid in a polar or non-polar medium such as an organic solvent (see paragraphs 11, 27 and 83 to 86 of the patent in suit).

Document (7) discloses cross-linked polyurethanes obtained by the addition reaction of a triphenylmethane triisocyanate, i.e. a polyisocyanate having three functional groups, and a difunctional hydroxy-terminated poly(ϵ -Caprolactone-co- δ -Valerolactone) oligomer, i.e. a POAC chain derived from two different lactones containing a C₁₋₆-alkylene group (see page 1759, "SYNOPSIS", lines 1 to 3 and 13 to 14 and page 1761, "Network Formation with TTI"). It thus remains to be evaluated if this product can be considered to be suitable as a dispersant.

2.1.2 It is undisputed that document (7) does not explicitly indicate if such a product can be used as a dispersant. However, the Opposition Division clearly stated in its decision that the product of document (7) was suitable for such a use (see point 2(a) of the reasons). The Appellant stated during oral proceedings that the cross-linked polyurethane, obtained as a film in document (7), was insoluble in solvents used, for example, in the preparation of paints and was unsuitable as dispersing agent. However, reference was

made only to the method of preparation disclosed on page 1761 and no evidence was submitted for this statement. Moreover, as remarked by the Respondent during oral proceedings, claim 1 as granted does not contain any limitation as to the solubility of the claimed polymeric dispersant in a specific solvent and document (7) shows only that the obtained final films are insoluble in the specific solvents used in the disclosed method of preparation.

The Board finds that in the present case, wherein the Opposition Division had found in its decision the polymeric product of document (7) to be a dispersant, the burden of proof to show that the cross-linked polyurethanes of document (7) are indeed insoluble in all possible solvents used, for example, in the preparation of paints and unsuitable as dispersants lies clearly on the Appellant. Since the Appellant did not submit any evidence in support of its allegation, the Board has no reason to diverge from the finding of the Opposition Division that the addition products of document (7) are suitable as dispersing agents.

Furthermore, the Board remarks that according to the method of preparation of the cross-linked polyurethane networks of document (7) disclosed on page 1761, "Network Formation with TTI", the allegedly insoluble film is only formed after curing for one week a clear film obtained by reacting the above mentioned starting compounds. As discussed during oral proceedings, said clear film, which can be identified and isolated during preparation, is also an addition reaction product of a triphenylmethane triisocyanate and a difunctional hydroxy-terminated poly(ϵ -Caprolactone-co- δ -

Valerolactone) oligomer. Moreover, such a film, which is obtained by gentle removal of the reactant solvents, is soluble in such solvents and, for this reason, certainly able to act as a dispersant. Therefore, also this disclosure of document (7) takes away the novelty of claim 1.

The Board thus concludes that the subject-matter of claim 1 of the granted patent is not novel.

3. *Admissibility of auxiliary requests 1 to 3*

3.1 The auxiliary requests 1 to 3 submitted with the letter of 25 March 2013 correspond to the auxiliary requests 1 to 3 submitted initially with the grounds of appeal with the additional correction of some obvious errors. This was not contested by the Respondent. The Respondent challenged instead the admissibility of these requests on the ground that they could have been filed before the department of first instance together with the request which was found to be allowable by the Opposition Division.

However, it is derivable from the minutes of the oral proceedings before the Opposition Division that the objections of lack of novelty against claim 1 as granted, based on documents (7) and (8), were raised for the first time during oral proceedings by the Opposition Division itself (see point 6 of the minutes). Therefore, the Appellant could not expect such objections to be raised and decided, under the circumstances of the case, to rely on the clearly novel claims of the auxiliary request 1 that it had been already submitted at the beginning of the oral

proceedings for addressing some clarity objections raised also by the Opposition Division itself (points 4 and 5 of the minutes).

Therefore, the Board finds that, in the present case, the Patent Proprietor must be allowed, after having read the reasons of the decision under appeal, to submit auxiliary requests, relating to subject-matter which is more limited than the granted claim 1 but broader than that allowed by the Opposition Division, in the attempt to overcome the deficiencies expressed in said decision.

- 3.2 The Respondent submitted also that at least auxiliary requests 2 and 3 were not convergent since the limitation contained in auxiliary request 2 had not been maintained in the further auxiliary request 3.

The Board finds that all the three auxiliary requests contain a restriction to a POAC derived from an alcohol of formula (1), which restriction was not contained in granted claim 1, in combination or not with other limiting features. Therefore, the Board finds that in the present case some of the requests may be considered perhaps parallel but certainly not divergent.

- 3.3 Therefore, the Board concludes that the auxiliary requests 1 to 3 are admissible.

4. *Auxiliary requests 1 to 3*

- 4.1 Article 123(2) EPC

4.1.1 According to each claim 1 of auxiliary requests 1 to 3 the radical T of the alcohol of formula (1) from which the POAC chain is derived is a chain terminating group derived from a C₁₋₃₅ monohydric alcohol or phenol.

Page 3 of the original application (reference being made hereinafter to the published document WO 99/56864) specifies that the chain terminator reacted with the different hydroxycarboxylic acids or lactones is preferably a T-OH compound, wherein T is optionally substituted C₁₋₃₅ hydrocarbyl and may be aromatic, alicyclic, heterocyclic or aliphatic (see page 3, lines 16 to 20). The term aromatic thus encompasses in this context all possible aromatic groups and is not limited to a benzene group, in which latter case T-OH would be a phenol.

Moreover, a phenol is only mentioned on the same page in connection with a preferred embodiment of the invention, wherein the T-OH contains one or more ether group derived from propylene and/or ethylene oxide (see page 3, lines 24 to 27), which groups are not specified in each claim 1 of auxiliary requests 1 to 3.

The Board remarks also that the rest of the original specification does not contain any further citation or example of phenol as T-OH group.

The Board thus concludes that the above discussed specific embodiment contained in each claim 1 of auxiliary requests 1 to 3 is not disclosed in the original application.

Therefore, each claim 1 according to the auxiliary requests 1 to 3 does not comply with the requirements of Article 123(2) EPC.

5. *Admissibility of auxiliary request 4*

5.1 Auxiliary request 4 was submitted for the first time during oral proceedings before the Board.

According to Articles 114 EPC and 13(1) RPBA any amendment to a party's case after it has filed its grounds of appeal may be admitted and considered at the Board's discretion.

As already found in several decisions of the Boards of Appeal of the EPO, a requirement for the admissions of late filed requests is the existence of sound reasons for filing a request at a late stage of the proceedings, for example when amendments are occasioned by unexpected developments during the proceedings (see T 1634/09, point 3.3. of the reasons and T 443/10, point 1.2 of the reasons).

5.2 The Appellant submitted that this request had been submitted as a reaction to the interpretation of the meaning of T in formula (1), raised in the letter by a third party of 19 February 2013. However, as correctly remarked by the Respondent during oral proceedings, the same interpretation of the meaning of T had already been part of the objections raised by the Respondent under Article 123(2) EPC in its letter of 6 April 2011 in reply to the statement of the grounds of appeal. Therefore, these objections and this interpretation of

the meaning of T were already known to the Appellant since two years before oral proceedings.

The Board remarks also that the Appellant had already submitted an auxiliary request 4 with the letter of 22 March 2013, which request had been then replaced by the new substantially different auxiliary request 4 during oral proceedings.

Therefore, the Board finds that the filing of such request cannot be considered to have been caused by an unexpected change of the Respondent's case and that there is no excuse for its late filing during oral proceedings.

The Board thus concludes that such an unjustified late request, even if based on an easy modification of the claimed subject-matter, is not to be admitted.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

I. Aperribay

P. Ammendola