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D E C I S I O N
of 6 August 1996

Case Number: T 0132/92 - 3.3.2

Application Number: 84301450.7

Publication Number: 0122013

IPC:

Language of the proceedings: EN

Title of invention:
Polymeric additives for water

Patentee:
CALGON CORPORATION

Opponent:
(01) Metallgesellschaft AG.
(02) W. R. Grace & Co.

Headword:
Polymeric additives/CALGON

Relevant legal provisions:
EPC Art. 54(2), 111(1)
EPC R. 86(3)

Keyword:
"Novelty - yes"

Decisions cited:
T 0012/81, G 0009/91

Catchword:
-



Case Number: T 0132/92 - 3.3.2

D E C I S I O N
of the Technical Board of Appeal 3.3.2
of 6 August 1996

Appellant: CALGON CORPORATION
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Representative: Crampton, Keith John Allen
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Respondent 01: Metallgesellschaft AG
(Opponent 01) -ZA Recht und Patente-
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Respondent 02: W. R. Grace & Co. - Conn.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 2 December 1991
revoking European patent No. 0 122 013 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: P. A. M. Lançon
Members: G. J. Wassenaar
R. E. Teschemacher

Summary of Facts and Submissions

- I. The appeal lies from a decision of the Opposition Division to revoke European patent No. 0 122 013, which was granted in response to European patent application No. 84 301 450.7.
- II. Notices of Opposition were filed against the European patent by the Respondents (Opponents 01 and 02). Revocation of the patent was requested on the grounds of lack of novelty and lack of inventive step (Article 100(a) EPC).

The oppositions were supported, *inter alia*, by the following documents:

- (D1) US-A-3 898 037
- (D10) Product bulletin Polymate 945
- (D11) Product bulletin Dearborn 8038

- III. The decision under appeal was based on three sets of claims; the claims as granted as main request and the claims according to the 1st and 2nd subsidiary request submitted during the oral proceedings.

Although in the communication sent out with the summons for oral proceedings it was indicated that the discussion would concentrate on inventive step, the main issue at the oral proceedings was in fact novelty. The Opposition Division held that the subject matter of claims 1 and 4 of the main request lacked novelty over D10 and that the subject matter of claim 3 of the main request and claim 4 of the first auxiliary request lacked novelty over D11. In their novelty argumentation the Opposition Division took into consideration further details of the compositions behind the trade names

"Polymate 945" and "Dearborn 8038" provided by the Respondent 02. Since the Respondent's submissions with respect to the actual compositions of Polymate 945 (D10) and Dearborn 8038 (D11) were not challenged by the Appellant the Opposition Division considered that the formulations of the products mentioned in D10 and D11 corresponded to the compositions indicated in paragraphs 3.8 and 3.9 of Respondent's 02 Statement of Opposition.

According to the minutes of the oral proceedings before the Opposition Division the Appellant further agreed that Polymate 945 and Dearborn 8038 had been on the market before the priority date (paragraph 4). Further according to the minutes, after a first amendment to the claims during the oral proceedings, the Chairman stated that the Opposition Division would allow only one more amendment to the set of claims (paragraph 8).

- IV. An appeal against this decision was lodged by the Appellant.

With the Statement of Grounds the Appellant filed three new sets of claims and an affidavit of Dr. Bennett P. Boffardi, one of the inventors.

- V. With a counter-statement the Respondent 02 filed an affidavit in the name of Brian Greaves. It was further requested that the Board should not consider the new claims "in the first instance". Later in the proceedings new affidavits in the name of Brian Greaves and Alec Rowland and exhibits "BG1" and "BG2" were filed. The exhibits disclosed the formulations of Dearborn 8038 and Polymate 945 respectively.

VI. In the oral proceedings, which were held on 06 August 1996 in the absence of the duly summoned Respondent 01, the Appellant filed a new set of claims 1 to 7. The Respondent 02 submitted that the Board should admit this further new set of claims only if the Appellant declared that he would not seek to broaden the scope of his latest set of claims in any further proceedings.

The independent claims 1 and 7 read as follows:

"1. A method of inhibiting the precipitation of scale-forming calcium phosphate in an aqueous system having a pH in the range 7 to 9 and a temperature in the range 0 to 80°C and containing in solution both calcium ions and phosphate ions, which comprises adding to the aqueous system an admixture comprising

- a) a water-soluble copolymer of
 - i) acrylic acid, and
 - ii) 2-acrylamido-2-methylpropyl sulphonic acid (AMPS)

in a weight ratio i):ii) in the range 1:20 to 20:1;

the copolymer having a weight average molecular weight (measured by low-angle-laser scattering) of less than 25,000; and

- b) a water-soluble compound that is either a homopolymer of polymaleic acid (PMA) or a homopolymer of polyacrylic acid (PAA);

said first and second components a) and b) being present in the admixture in a weight ratio of from 1:50 to 50:1;

and said admixture being added to the aqueous system in an amount of from 1 to 100 mg/l; the aqueous system being a cooling system, a reverse osmosis system, a desalination plant or a gas scrubber.

7. An admixture for inhibiting the precipitation of scale-forming calcium phosphate in an aqueous system, that is a cooling system, a reverse osmosis system, a desalination plant or a gas scrubber, having a pH in the range 7 to 9 and a temperature in the range 0 to 80°C and containing in solution both calcium ions and phosphate ions, wherein the admixture is an admixture as defined in any one of claims 1 to 6."

The Respondent 02 maintained the novelty objection with respect to the new set of claims only on the basis of D1. The arguments can be summarised as follows:

D1 discloses acrylic acid co-polymers according to the definition under a) of claim 1 and their use as water additive for inhibiting the precipitation of calcium phosphate. D1 also discloses mixtures of co-polymers equivalent to said acrylic acid co-polymer with an acrylic acid homopolymer as defined under b) of claim 1. Because of the equivalency of the co-polymers, the co-polymer in said mixture with acrylic acid homopolymer may, within the scope of D1, be replaced with the acrylic acid co-polymer according to present claim 1.

VII. The Appellant requested that the decision under appeal be set aside and the patent be maintained on the basis of the set of claims submitted in the oral proceedings on 06 August 1996. He declared that these claims were submitted unconditionally, i.e. that he did not intend to go back to claims previously submitted nor to submit any other claims of broader scope in the further proceedings.

The Respondent 01 requested in writing that the appeal be dismissed.

The Respondent 02 also requested that the appeal be dismissed. In case the Board allowed the submission of new claims and accepted novelty, he requested to refer the case back to the first instance for the examination of inventive step.

Reasons for the Decision

1. The appeal is admissible.
2. *Admissibility of new claims*
 - 2.1 From Rule 57a EPC it is apparent that in opposition proceedings the patentee has a right to amend the claims if the amendments are occasioned by grounds specified in Article 100 EPC. The EPC does not specifically regulate the frequency and the ultimate filing time of amendments in opposition proceedings. Rule 86(3) EPC, to which reference is made in the contested decision, only relates to amendments of the European patent application in proceedings before the Examining Division.

The case law of the Boards of Appeal has, however, derived in particular from Rule 57(1) EPC the principle that the proprietor has no right to have amendments admitted in any stage of opposition proceedings. Due to the discretion of the Opposition Division or the Board of Appeal amendments may be refused if they are neither appropriate nor necessary (see T 406/86, OJ EPO 1989, 302). In particular, late amendments may be refused if they are not a fair attempt to overcome an objection made.

2.2 Apart from their reference to Rule 86(3) EPC, the Opposition Division has not given any reasons why no further amendments would be allowed after the second amendment during the oral proceedings. Especially in the present case, where the Opposition Division indicated that the first amendment did not overcome the novelty objection and that the second amendment introduced new subject matter, they should have given the Appellant the opportunity to remedy the latter deficiency. By announcing that further amendments would not be allowed the Board prevented the Appellant from submitting formally acceptable and novel claims on which basis an inventive step discussion, to which the parties were invited, would have been possible. Such a discussion is now only possible many years after the first oral proceedings before the Opposition Division. The Opposition Division's course of proceedings, therefore, substantially delayed the proceedings.

In general, the question whether an amendment is appropriate can only be answered on the basis of its content, i.e. after it has actually been submitted. To refuse any further amendment would only be appropriate if it is evident after various unsuccessful amendments that the Proprietor is not seriously trying to overcome the objections but is only delaying the proceedings. There is no evidence for such a behaviour in this case.

2.3 The Respondent's 02 request that the Board should likewise refuse to consider newly amended claims and that they should only decide whether or not claims before the Opposition Division meet the novelty attack or not, would imply a further delay of the proceedings.

Moreover such a request cannot be followed since the Appellant has deleted the sets of claims which formed the basis of the contested decision. The Board is bound

to the text as submitted by the Appellant and cannot decide on claims which are no longer at issue (Article 113(2) EPC).

The limitations in the present set of claims are a fair attempt to overcome a novelty objection. The claims submitted during oral proceedings before the Board are, therefore, admissible and form the basis of this decision.

3. *Allowability of amendments*

The amendments in the present set of claims were not formally objected to. The Board examined them on its own motion and found them compatible with the requirements of Article 123(2) and (3) EPC.

4. *Novelty*

4.1 Novelty was finally contested only on the basis of D1. This document discloses acrylamido-sulphonic acid polymers and their use as dispersants for particles in aqueous systems. Amongst many others, D1 discloses specifically co-polymers of the sodium salts of 2-acrylamido-2-methylpropyl sulphonic acid (AMPS) and acrylic acid in weight ratios of 70:30, 50:50 and 30:70 (table 1, samples 7A to 7K). The molecular weight of the specified co-polymers is not disclosed. The molecular weight ranges of the polymers in general is indicated as being from about 750 to 5,000,000 with a preferable range from about 750 to about 250,000 and most desirable from about 1,000 to 100,000 (column 5, lines 6 to 14).

4.2 D1 also discloses in various tests that AMPS co-polymer's are effective dispersants for a plurality of particles such as iron oxide, clay, calcium carbonate and calcium phosphate. It is further shown that such

co-polymers not only have the capacity to disperse iron oxide, but also have the capacity to counteract flocculation of iron oxide by other polymers such as polyacrylic acid. For this purpose two mixtures of equal amounts of AMPS co-polymers with polyacrylic acid were prepared and tested. The co-polymers used for these test were AMPS/methacrylamide and AMPS/disodium maleate (table 6B). There is no disclosure of a mixture with an acrylic acid co-polymer. Thus D1 neither discloses an admixture of a co-polymer of acrylic acid and AMPS with a compound being either PMA or PAA as claimed in present claim 7, nor the use of mixtures of AMPS co-polymers and polyacrylic acid as dispersant. It merely discloses that AMPS co-polymers can generally be used as dispersant even in the presence of a flocculation agent such as polyacrylic acid. Other mixtures with polyacrylic acid than those two specifically disclosed comparative examples in table 6B are not comprised by D1.

- 4.3 The Board cannot accept Respondent's 02 argument that because of the equivalence of the AMPS/acrylic acid co-polymers with the AMPS co-polymers used in the two mixtures with polyacrylic acid, mixtures thereof with AMPS/acrylic acid co-polymers equally belong to the disclosure of D1.

In analogy to the leading decision on novelty of chemical compounds T 12/81 (OJ EPO 1982,296), this argument would only be valid if D1 comprised a generical teaching to mix AMPS co-polymers with polyacrylic acid. In the absence thereof said two comparative examples with polyacrylic acid in D1 must be considered as isolated disclosures, which do not destroy the novelty of other mixtures with polyacrylic acid.

The admixture of claim 7 differs from those disclosed by D1 further in that the molecular weight of the copolymers is less than 25,000.

- 4.4 On the basis of the Appellant's declarations contained in the minutes of the oral proceedings before the Opposition Division it may be assumed that the products mentioned in D10 and D11 represent prior uses in the meaning of Article 54(2) EPC. Being uncontested it may further be assumed that the actual formulation was as indicated in exhibits BG1 and BG2 later submitted by Respondent 02. These prior uses do not destroy the novelty of present claim 7, because they neither contain component a) nor component b) of claim 7. The other documents on file do not disclose admixtures according to claim 7 either so that the subject matter of claim 7 must be considered novel. Since the method claims 1 to 6 are limited to the use of said admixture they must equally be considered to be novel.

5. *Inventive step*

The opposition ground of lack of inventive step was not considered in the contested decision. Following the principles laid down in G 9/91 (OJ EPO 1993, 408, Reasons, 18) the Board exercises its power under Article 111(1) EPC to remit the case to the Opposition Division to consider the matter of inventive step.

6. *Corrections*

The Board has observed that present claim 1 as submitted during oral proceedings contains an obvious error since the expressions "a homopolymer of polymaleic acid" and "a homopolymer of polyacrylic acid" do not make sense. From the discussion during the oral proceedings it was evident that these expressions were intended to read "a homopolymer of maleic acid"

and "a homopolymer of acrylic acid" respectively. Claim 1 could be corrected under Rule 88 EPC during further prosecution by the first instance.

Order

For these reasons it is decided that:

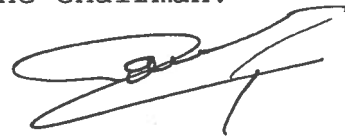
1. The decisions under appeal is set aside.
2. The case is remitted to the first instance for further prosecution on the basis of claims 1 to 7 as submitted during the oral proceedings.

The Registrar:



P. Martorana

The Chairman:



P. A. M. Lançon

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