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Datasheet for the decision of 24 March 2017

Case Number: T 1154/12 - 3.3.05

Application Number: 03251442.4

Publication Number: 1344755

IPC: C04B24/38, C04B28/02

Language of the proceedings: EN

Title of invention:
Admixture and extrudable hydraulic composition

Patent Proprietor:
Shin-Etsu Chemical Co., Ltd.

Opponent:
AKZO NOBEL CHEMICALS INTERNATIONAL B.V.

Headword:
Extrudable hydraulic composition/SHIN-ETSU

Relevant legal provisions:
RPBA Art. 12(1)(a), 12(4), 13(1), 13(3)
EPC Art. 54(1), 54(2), 56, 83, 123(2), 123(3)

Keyword:
Request to reject as inadmissible a claim request filed with the grounds of appeal - rejected
Amendments - added subject-matter (no)
Sufficiency of disclosure - (yes)
Novelty - (yes)
Inventive step - (yes)

Decisions cited:
T 0378/11, T 0792/12, T 1008/02

Catchword:

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Case Number: T 1154/12 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 24 March 2017

Appellant: (Patent Proprietor)	Shin-Etsu Chemical Co., Ltd. 6-1, Otemachi 2-chome Chiyoda-ku Tokyo (JP)
Representative:	Stoner, Gerard Patrick Mewburn Ellis LLP City Tower 40 Basinghall Street London EC2V 5DE (GB)
Respondent: (Opponent)	AKZO NOBEL CHEMICALS INTERNATIONAL B.V. Velperweg 76 6824 BM Arnhem (NL)
Representative:	Rupp, Christian Mitscherlich PartmbB Patent- und Rechtsanwälte Sonnenstraße 33 80331 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 13 March 2012 revoking European patent No. 1344755 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman E. Bendl
Members: A. Haderlein
P. Guntz

Summary of Facts and Submissions

I. The present appeal lies from the decision of the opposition division to revoke European patent EP 1 344 755. The patent in suit concerns an extrudable hydraulic composition.

II. The following documents were among those referred to in the course of the proceedings before the opposition division:

D2: Rawle, A: Basic principles of particle-size analysis, in: Surface Coatings International Part A, Vol. 86, A02, 37-76 February 2003, pages 58 to 65
D3: English translation of JP-A-1997 165249
D7: JIS A 5002 (2003)

III. The opposition division found that the subject-matter according to claim 1 of the main request underlying the impugned decision was not new in view of D3, the subject-matter of claim 1 of the auxiliary requests underlying the impugned decision lacking an inventive step when starting from D3 as the closest prior art.

IV. With its statement of grounds of appeal dated 23 July 2012, the proprietor (appellant) filed *inter alia* a second auxiliary request.

V. The respondent (opponent) filed the following document:

D17: "Mastersizer - ParticleSizeDistribution"

VI. The board issued a communication including its preliminary opinion *inter alia* with respect to the

novelty of the subject-matter of claim 1 of the second auxiliary request in view of D3.

VII. At the oral proceedings before the board, the appellant declared that the second auxiliary request filed with the statement of grounds of appeal was its sole request and that the other requests were withdrawn.

VIII. Claim 1 of the sole request (labelled "second auxiliary request dated 23 July 2012") reads as follows (amendments with respect to claim 1 as granted underlined):

"1. An extrudable hydraulic composition comprising a hydraulic substance and a nonionic water-soluble cellulose ether having an average particle size of at least 120 µm, and a lightweight aggregate, wherein the amount of water-soluble cellulose ether is 0.2 to 2.0% by weight based on the entire contents of the extrudable hydraulic composition excluding water."

Claims 2 to 4 are directed to particular embodiments of the composition according to claim 1, whereas claim 5 is directed to a method of manufacturing an article comprising the use of a composition according to any one of claims 1 to 4.

IX. The appellant's arguments, as far as relevant to the present decision, may be summarised as follows:

Amendments

Claim 1 was based in particular on the passages on page 3, lines 29 et seq., and page 4, lines 7 et seq., as originally filed. The requirement of Article 123(2) EPC was therefore met.

Claim construction

The expression "extrudable" in claim 1 should be construed so as to encompass a dry composition which, when mixed with a suitable amount of water and being extruded, resulted in form-stable objects free from meander and breakage as defined in paragraphs [0025] and [0026] of the patent in suit.

Sufficiency of disclosure

The invention was sufficiently disclosed. In particular, the feature relating to the average particle size did not give rise to an objection under Article 83 EPC.

Novelty

The subject-matter of claim 1 differed from the composition disclosed in D3 in particular by the amount of cellulose ether. D3 disclosed a cellulose ether amount of 1.0 part by weight per 100 parts by weight of cement. In order to arrive at a value falling within the claimed range, the skilled person would not only have to choose the above value but would also have to select the aggregate amount to be 300 parts by weight per 100 parts by weight of cement. There was no indication in D3 to do so. In particular, in the only example described in Table 1 of D3, the cellulose ether amount ("segregation reducing agent") was 0.08 parts by weight per 100 parts by weight of cement, i.e. a value far below the maximum value disclosed on page 3 of D3.

Inventive step

The problem to be solved was to provide extrudable

hydraulic compositions which were well-dispersible, i.e. did not form clumps resulting in meander or breakage. They could be utilised in their entirety in hydraulic compositions, even in the presence of a large amount of water.

X. The respondent's arguments, as far as relevant to the present decision, may be summarised as follows:

Request not to admit the sole claim request

The respondent requested to reject the appellant's sole claim request as inadmissible. This request was late-filed because the representative's representative had changed. The claim requests filed with the statement of grounds of appeal were not convergent and were intended to recast the entire case discussed before the opposition division and thus were not suitable for the conduct of efficient appeal proceedings. This claim request therefore should not be admitted.

Amendments

While the features "hydraulic substance" and "lightweight aggregate" were both disclosed in the application as originally filed on page 3, lines 29 et seq., they were contained in a list of compounds including in particular reinforcing fibres. However, limiting this list to two specific elements thereof amounted to a specific selection contrary to the requirements of Article 123(2) EPC. There was no indication in this passage to freely select from this list. Therefore, the requirement of Article 123(2) was not met.

Claim construction

The expression "extrudable" should not be construed as narrowly as submitted by the appellant. While claim 1 should be construed so as to also encompass dry compositions like the one disclosed in D3, the wording of claim 1 did not entail the narrow meaning of "extrudability" as referred to in paragraphs [0025] and [0026] of the patent in suit.

Sufficiency of disclosure

The average particle size referred to in claim 1 led to a lack of sufficiency of disclosure because several methods were available to measure this value and claim 1 did not indicate the basis for calculating the average particle size. Even if the skilled person used a sieving method as indicated in the patent, he would still be at a loss since, as could be seen from D7, different sieving methods were available. Moreover, the particle size was essential for the invention, as could be seen in particular from Tables 2 and 3 of the patent. Furthermore, claim 1 lacked essential features and in particular did not include the features of the examples, and therefore the skilled person was unable to execute the invention over the whole range claimed. Also, the proprietor had not shown that the invention could be carried out over the whole scope claimed.

Novelty

The sole contentious feature was the amount of cellulose ether. The ranges disclosed in D3 when recalculated resulted in a maximum value of 0.25%. Even if the skilled person had to choose the upper value of

the cellulose ether and the lower limits of the other compounds achieve this, there was nothing in D3 that would prevent the skilled person from doing so.

Inventive step

The closest prior art was represented by D3. The amount of cellulose ether did not solve any problem. In particular, as the amount of water was not defined in claim 1, it also encompassed compositions which, when mixed with a large amount of water, did not result in form stability when extruding. On the other hand, due to the open language in claim 1, this claim also encompassed compositions comprising water-reducing agents which, when mixed with little water, would result in a paste that was too viscous to be extruded. Also, as the method for determining the average particle size was not defined in claim 1, claim 1 now also encompassed the comparative examples which were shown not to solve the problem referred to by the proprietor. The problem to be solved was therefore the provision of an alternative composition. In view of this problem, it was obvious for the skilled person to use a cellulose ether amount falling within the ambit of claim 1. The subject-matter of claim 1 therefore did not involve an inventive step.

XI. Requests

The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the set of claims submitted as "second auxiliary request" with the statement of grounds of appeal dated 23 July 2012 (sole request).

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. Respondent's request not to admit the appellant's sole claim request into the proceedings

1.1 The appellant's sole claim request was filed with its statement setting out the grounds of appeal as second auxiliary request. Therefore, the appeal proceedings were in principle to be based thereupon (cf. Article 12(1)(a) RPBA). The respondent too based its submissions thereupon, in that in its reply to the grounds of appeal it objected to this claim request for lack of novelty (see last page, section "5. Auxiliary Requests"), but did not object to its admissibility.

1.2 The respondent's request not to admit the appellant's sole claim request into the proceedings pursuant to Article 12(4) RPBA was filed only after the parties had been summoned to oral proceedings before the board and also after the board had issued a communication containing its preliminary opinion on the novelty of the subject-matter of claim 1 of the second auxiliary request, i.e. the sole claim request now on file. The respondent's request therefore amounted to an amendment to its case, the admission of which was at the discretion of the board (Article 13(1),(3) RPBA).

1.3 The respondent submitted that its request not to admit the appellant's sole claim request had been filed at such a late stage because the representative of the respondent had changed. According to the respondent, the claim requests filed with the statement of grounds of appeal were not convergent and were intended to recast the entire case discussed before the opposition division and thus were not suitable for the conduct of

efficient appeal proceedings.

1.4 The board is of the opinion that requesting not to admit a claim request filed with the grounds of appeal at such a late stage as in the present case, i.e. in particular after the board had issued a preliminary opinion on the patentability of the subject-matter of the appellant's claim request, cannot be justified by the fact that the respondent's representative had changed, in particular because to allow such an argument would leave the door open for a change of representative to be purposively made in order to enable the admission of new requests after the time limit for filing the statement of grounds of appeal or the reply thereto (see T 792/12, reasons 3.4).

Also, the board fails to see why not admitting a claim request on whose patentability both parties and the board have already commented would be expedient in view of the principle of procedural economy. Moreover, claim 1 of the sole request corresponds to the main request underlying the impugned decision, plus an additional feature (cf. VIII *supra*). Again, the board fails to see why such an amendment amounted to "recasting the entire case"; it can in fact be considered a legitimate reaction to the reasons contained in the impugned decision. It is further noted that claim 1 of this request comprises all features of claim 1 of the higher-ranking requests filed with the grounds of appeal, and therefore the present request cannot be said to be non-convergent compared to the aforementioned requests.

1.5 For the above reasons, the board rejects the respondent's request not to admit the appellant's sole

claim request into the proceedings.

2. Amendments

2.1 Claim 1 is based on originally filed claim 4 (see also claims 1 and 3 as filed), including the features "hydraulic substance" and "lightweight aggregate" and the feature concerning the amount of cellulose ether (see VIII *supra*).

2.2 The feature concerning the amount of cellulose ether is not objected to by the respondent. This feature indeed finds its basis on page 3, lines 16 to 21, of the originally filed description.

2.3 Likewise, the respondent is of the opinion that "hydraulic substance" and "lightweight aggregate" are both disclosed in the application as originally filed. They were disclosed on page 3, lines 29 et seq., where they were contained in a list of compounds including in particular reinforcing fibres. However, limiting this list to two specific elements thereof allegedly amounted to a specific selection contrary to the requirements of Article 123(2) EPC.

2.4 The board is not persuaded by this argument. Firstly, the application as filed is directed to a hydraulic composition in general (cf. claim 4; page 4, lines 32 et seq.; cf. also claims 1 and 3 as originally filed). A hydraulic composition necessarily comprises a hydraulic substance. Thus, including the two contentious features in claim 1 does not amount to a twofold selection from the list on page 3, lines 29 et seq., but rather amounts to a single selection ("lightweight aggregate") from a single list. Moreover, the passage on page 4, lines 7 to 11, explicitly

discloses lightweight aggregate and hydraulic substance in combination.

2.5 Thus, the requirement of Article 123(2) EPC is met for claim 1.

2.6 This also applies to the subject-matter of the remaining claims whose basis in the application as filed is not contentious.

2.7 As claim 1 includes all the features of claim 1 as granted, the constraint of Article 123(3) EPC is also met.

3. Construction of the term "extrudable composition" in claim 1

3.1 This term was contentious between the parties, and the board considers it appropriate to comment upon its construction before assessing the requirements of sufficiency, novelty and inventive step.

3.2 It is common ground between the parties that claim 1 does not require the presence of components other than those mentioned in that claim. In particular, claim 1 encompasses compositions which do not include water, i.e. dry compositions of a hydraulic substance, a nonionic water-soluble cellulose ether having the required particle size and a lightweight aggregate.

3.3 Apart from the presence of the aforementioned components, due to the qualification "extrudable" claim 1 requires the composition to show a certain degree of shape retention when mixed with an appropriate amount of water and subsequently extruded

through a die.

3.4 The board notes that the feature in question does not require that the composition necessarily results in the form-stable object being free of meander or breakage (cf. paragraphs [0025] and [0026], Tables 2 and 3, row "Extrudability"). Whether the claimed composition is effectively suitable for extruding without the formation of meander or breakage is a matter of inventive step assessment, i.e. whether the problem of avoiding meander and breakage is successfully solved (see 6.5 *infra*).

4. Sufficiency of disclosure

4.1 According to the respondent, the patent lacked sufficient disclosure because it did not define the method which should be used for measuring and calculating the "average particle size" called for in claim 1.

The board is not persuaded by this argument. It is undisputed that several methods of measuring or calculating the average particle size (see for instance laser diffraction analysis as submitted by the respondent by reference to D17) were conceivable to the skilled person before the effective date of the patent in suit. Whether or not the use of several kinds of measuring or calculating the average particle size leads to different results is however a matter of determining the boundaries of the independent claim, i.e. a matter of clarity rather than sufficiency of disclosure (see T 378/11, reasons 5.4 and 5.5).

Moreover, the board notes that in paragraph [0021] of the patent in suit "the JIS prescribed sieve method" is

mentioned. So, although the specific JIS standard is not indicated, reference is made to sieving, thus pointing to a concrete method for measuring the particle size. While D2, referred to by the respondent, indeed mentions that sieving may prove difficult for certain materials (page 62, Section Methods of measurement - Sieves), it does not state that it is impossible to use sieving as a method for determining the average particle size of water-soluble cellulose ether called for in claim 1. This is also true for D7, which the respondent referred to in order to show that different sieving methods were available at the effective date of the patent in suit.

4.2 The board also notes that document D3 relied upon by the respondent for lack of novelty and inventive step refers to "the average particle size" (see paragraph [0009]). Thus, if one were to follow the respondent's argument and conclude that the "average particle size" feature led to insufficient disclosure, the disclosure of D3 would not be enabling either.

4.3 Further according to the respondent, a lack of sufficiency of disclosure arose because of the open wording "at least of 120 µm" in claim 1. It was doubted that a composition employing any particle size above that minimum value resulted in an extrudable composition leading to the effect as claimed.

The board notes that it is not disputed that claim 1 also encompasses dry compositions containing only the components specified therein. There can thus be no doubt that the skilled person can prepare a dry composition according to claim 1 wherein the average particle size of the water-soluble cellulose ether can have any value exceeding 120 µm. The board also fails

to see why such a composition would not be suitable for producing an object when mixed with an appropriate amount of water and extruded through a die, the object being at least to a certain extent form-stable (cf. 3.3 *supra*). It is also noted that in *inter partes* proceedings each party bears the burden of proof for the facts it alleges and that the respondent did not file any evidence that would show that compositions according to claim 1 comprising a water-soluble cellulose ether having an average particle size substantially exceeding 120 µm would not be suitable for producing a form-stable object when mixed with an appropriate amount of water. The board also notes that claim 1, apart from being suitable for producing a form-stable object when mixed with an appropriate amount of water, does not require an "effect" as contended by the respondent. Whether the claimed composition results in extruded objects without the formation of meander or breakage is a matter of inventive step and not of sufficiency of disclosure (cf. 6 *infra*).

Decision T 1008/02 cited by the respondent is not applicable in the present case. In this decision it was questionable whether a certain (unusual) parameter could be arrived at over the whole ambit of claim 1 by defining only a minimum value thereof (reasons 3.4). In the present case however there can be no serious doubt that a composition comprising water-soluble cellulose ether particles having any average particle size exceeding 120 µm can be produced by a skilled person with a mind willing to understand the claimed invention.

4.4 Further according to the respondent, claim 1 did not comprise all features necessary for carrying out the

invention over the whole ambit of claim 1. In particular, not all features of the examples were included in claim 1. Moreover, the appellant had not shown that the invention could be carried out over the whole ambit of claim 1.

It is however not necessary to incorporate all features of the examples into claim 1 in order to meet the requirement of sufficiency of disclosure when, as in the present case, there exists no serious doubt that the skilled person can carry out the invention over essentially the whole ambit of the independent claim. Moreover, it is the respondent in the present case that would need to discharge its burden of proof to show that the skilled person could not carry out the invention over essentially the whole ambit of the independent claim. The respondent has not done so.

4.5 The board thus concludes that the requirement of sufficiency of disclosure set forth in Article 83 EPC is met.

5. Novelty

5.1 According to the respondent, D3 was novelty-destroying for the subject-matter of claim 1 in particular because claim 1 also covered dry compositions and D3 disclosed such dry compositions. While the appellant does not contest that claim 1 also covers dry compositions, it contends that D3 in particular does not disclose a cellulose ether amount in the claimed range.

5.2 It is common ground that the maximum value of the cellulose ether recalculated in terms of the basis called for in claim 1 ("% by weight based on the entire contents of the extrudable hydraulic composition

excluding water" in claim 1 vs. "parts by weight per 100 parts by weight of cement" in D3) is 0.25% (D3, paragraph [0015]: 1.0/(300+0.5+1.0+100)=0.25%). This amount is however only arrived at if the skilled person chooses not only the upper limit of the range for the amount of the cellulose ether (1.0 part by weight) but also the lower limit of the range for the aggregate (300 parts per weight). D3 does not contain any teaching pointing towards such a specific selection. In particular, in the example in Table 1 of D3 an amount of 0.08 parts per weight of cellulose ether ("segregation reducing agent") is used, i.e. an amount far below the maximum value of 1.0 parts per weight disclosed on page 8 of D3. Whether it was obvious to the skilled person to make such a selection as contended by the respondent is not relevant in the context of novelty.

5.3 The subject-matter of claim 1 is therefore new (Article 54(1),(2) EPC). This also applies to the claims dependent on claim 1 and the method according to claim 5 using the composition according to claim 1.

6. Inventive step

6.1 The invention concerns an extrudable hydraulic composition (cf. 3 *supra*).

6.2 It is common ground that D3, i.e. the sole document cited by the respondent to allegedly destroy the novelty and inventive step of the claimed subject-matter, represents the closest prior art.

6.3 According to the patent and as argued by the appellant, the problem to be solved was to provide extrudable hydraulic compositions which were well-dispersible,

i.e. did not form clumps resulting upon extrusion in meander or breakage, and utilised in their entirety in hydraulic compositions even in the presence of a large amount of water (see paragraphs [0004], [0025], [0026] and [0028]).

6.4 As a solution to this problem, the patent according to claim 1 of the sole request proposes an extrudable hydraulic composition comprising nonionic water-soluble cellulose ether of a specific average size, characterised in particular by the amount of the cellulose ether being 0.2 to 2.0% by weight based on the entire contents of the extrudable hydraulic composition excluding water.

6.5 As to the success of the solution, the board observes as follows.

6.5.1 The examples according to the invention (Table 2, examples 1 to 3) all result in form-stable objects which show neither meander nor breakage (Table 2 and paragraph [0026]). In contrast, D3 does not deal with extrusion of form-stable objects. In particular, D3 is concerned with "highly flowable concrete mixtures" (see for instance paragraph [0009]), i.e. dry compositions which are mixed with water in a mixture which would not result in form-stable objects if it were extruded.

6.5.2 In the absence of evidence that would show that no such objects which are form-stable and free of meander and breakage could be obtained over essentially the whole scope claimed, the board concludes that it is credible that the problem is indeed solved.

The fact that the compositions according to claim 1, when mixed with excessive amounts of water obviously

will not result in form-stable objects upon extrusion, is not at variance with this finding because the composition is still capable of resulting in such objects if a suitable amount of water is used.

6.5.3 In this context the respondent submitted that the patent disclosed embodiments (Table 3) which result in meander and breakage (see Table 3 in conjunction with paragraphs [0025] and [0026]), i.e. which do not solve the problem posed. It may be argued, as submitted by the respondent, that if the average particle size of the cellulose ether used in these examples were measured or calculated by a different method it could well fall within the range claimed, showing that there was no improvement over the whole scope claimed. But the respondent did not show that the average particle size of the cellulose ether in any one of the comparative examples shown in Table 3 (cf. Table 1: 75 and 108 µm), when measured or calculated according to a different method that could reasonably be envisaged by the skilled person, would be equal to or exceed 120 µm, i.e. a value covered by claim 1.

6.5.4 Therefore, the problem does not need to be reformulated (see 6.3 *supra*) and, in particular, does not consist in the mere provision of an alternative composition as contended by the respondent.

6.6 As to obviousness, the board observes, as stated at 6.5.1 *supra*, that D3 does not address extrusion to obtain form-stable objects at all. Moreover, the amount of water-soluble cellulose ether in the example of D3 is significantly lower than the lower limit called for in claim 1. In fact, this amount of 0.08 parts by weight (see table on top of page 14: "Segregation reducing agent") corresponds to 0.016% by weight based

on the entire contents of the extrudable hydraulic composition excluding water, i.e. a value significantly lower than the minimum value of 0.2% called for in claim 1. In order to arrive at a value falling within the ambit of claim 1, the skilled person would have to choose not only the upper limit of the range for the amount of the cellulose ether disclosed in D3 but also the lower limit of the range for the aggregate (cf. 5.2 *supra*). D3 does not contain any teaching pointing towards such a specific selection, let alone a teaching to perform such a selection in order to solve the problem posed (see 6.3 *supra*).

6.7 The board thus concludes that the subject-matter of claim 1 involves an inventive step and that the requirement of Article 56 EPC is met. The same holds true for dependent claims 2 to 4 and for method claim 5.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to maintain the patent in amended form on the basis of the sole request, submitted as second auxiliary request with the statement of grounds of appeal dated 23 July 2012, and a description to be adapted, if necessary.

The Registrar: The Chairman:

C. Vodz E. Bendl

Decision electronically authenticated