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Case Number: T 1362/10 - 3.3.06

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Language of the proceedings: EN

Title of invention:
Grinding method for inorganic particulate material

Patentee:
Imerys Minerals Limited

Opponent:
OMYA DEVELOPMENT AG

Headword:
Grinding method with "sub-effective" amount of dispersant/IMERYS

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step - all requests (no)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1362/10 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 3 August 2012

Appellant: (Opponent)
OMYA DEVELOPMENT AG
42 Baslerstrasse
CH-4665 Oftringen (CH)

Representative:
Glas, Holger
Maiwald Patentanwalts GmbH
Elisenhof
Elisenstrasse 3
DE-80335 München (DE)

Respondent: (Patent Proprietor)
Imerys Minerals Limited
Par Moor Centre
Par Moor Road
Par
Cornwall PL24 2SQ (GB)

Representative:
Reverzani, Cristina
Haseltine Lake LLP
Theatinerstrasse 3
D-80333 Munchen (DE)

Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 21 April 2010 concerning maintenance of European patent No. 1546268 in amended form.

Composition of the Board:

Chairman: P.-P. Bracke
Members: E. Bendl
C. Vallet

Summary of Facts and Submissions

I. The appeal is from the decision of the Opposition Division to maintain the European patent no. 1 546 268 in amended form.

II. The Appellant/Opponent filed an appeal against this decision, objected inter alia that the invention did not involve an inventive step and cited among other documents

E1: GB-A-1 599 632.

III. The Respondent/Proprietor disputed the Appellant's objections, submitted

E17: Declaration, submitted with letter of 19 March 2011

and filed a main request and three sets of auxiliary requests.

IV. Claim 1 of the **main request** read as follows:

"1. A method of grinding an inorganic particulate material in an aqueous suspension, wherein the said aqueous suspension includes a sub-effective amount of a dispersant for the inorganic particulate material."

Claim 1 of the **first auxiliary request** contained the passage "wherein the grinding of the inorganic particulate material takes place under grinding conditions such as to raise the steepness of the inorganic particulate material to a steepness factor of

above about 35" appended to the text of Claim 1 of the main request.

Claim 1 of the **second auxiliary request** contained, compared to Claim 1 of the main request, the text "wherein after grinding, an additional amount of a dispersant is added and an amount of water is removed from the aqueous suspension" at the end of the claim.

In Claim 1 of the **third auxiliary request** the passage "and wherein the aqueous suspension includes up to about 0.25% by weight of dispersant, based on the dry weight of the inorganic particulate" was appended, compared to Claim 1 of the main request.

V. The main arguments of the **Appellant** were as follows:

Interpretation of the feature "sub-effective" amount of dispersant

- Claims 1 of all requests do not define **when** the amount of dispersant has to be "sub-effective. This could for instance be at a specific moment during the grinding step.

Article 56 EPC

- E1 is the closest state of the art.

- No proof has been submitted that in the examples a "sub-effective" amount of dispersant was used.

- Starting from the closest state of the art, the objective problem of the patent-in-suit is the provision of an alternative grinding process. Given the

low amounts of dispersant used in E1, such a process is already derivable from this disclosure.

- Therefore, the claimed subject-matter does not involve an inventive step.

The main arguments of the **Respondent** were as follows:

Interpretation of the feature "sub-effective" amount of dispersant
- The feature means that the amount is already "sub-effective" **at the beginning** of the grinding step and remains like that during the entire step.

Article 56 EPC
- E1 is used as the starting point for the problem and solution approach.

- The examples of the patent-in-suit show improved filterability properties, improved compatibility with dispersants and no change of colour of the product.

- The examples of the patent-in-suit were prepared using "sub-effective" amounts of dispersant.

- Thus, the claimed subject-matter involves an inventive step.

VI. The Appellant requested that the decision under appeal be set aside and that the European patent no. 1 546 268 be revoked.

The Respondent requested that the appeal be dismissed or, in the alternative, that the patent be maintained

on the basis of any of the three auxiliary requests submitted with the letter dated 19 March 2011.

Reasons for the Decision

1. Inventive step

According to the problem and solution approach, which is used by the Boards of Appeal of the European Patent Office in order to decide on the question of inventive step, it has to be determined which technical problem the object of a patent objectively solves vis-à-vis the closest prior art document. It also has to be determined whether or not the solution proposed to overcome this problem is obvious in the light of the available prior art disclosures.

1.1 Main request - Claim 1

There was a dispute between the parties about the meaning of the term "sub-effective" used in Claim 1 (see item V. above).

In the following discussion on inventive step the Board interprets the wording of Claim 1 in the broadest possible way, which means, that the amount of dispersant in the claimed method is "sub-effective" at the beginning and at each and every moment up to the end of the grinding step.

1.1.1 The patent-in-suit characterizes the claimed method of grinding inorganic particulate material as leading to

reduced discolouration, improving compatibility with dispersants and improving filtration properties.

The parties started their discussion from E1 as the closest state of the art. The Board too sees this document as a suitable starting point for the problem and solution approach.

E1 refers to a method for comminuting a calcium carbonate containing material in the presence of small amounts of dispersant in order to obtain an easily re-dispersible product after grinding. The dispersant is thereby preferably dosed in such amounts, that the dispersant, which adheres to the surfaces of the ground particulate material, is entirely bound at the end of the grinding step, so that finally aggregates of ground material form.

This means, that **at the end** of the grinding step the amount of dispersant becomes "sub-effective".

1.1.2 Vis-à-vis E1 the problem to be solved is the provision of a grinding method for inorganic particulate material improving discolouration properties, compatibility with dispersants and filtration properties.

1.1.3 As the solution to this problem the method described in Claim 1 of the patent-in-suit has been proposed by the Respondent.

The difference between Claim 1 and the disclosure of E1 is to be seen in the presence of a "sub-effective" amount of dispersant right from the beginning of the grinding process.

1.1.4 Examples 1-3 of the patent-in-suit were referred to by the Respondent as a proof that the problems have actually been solved.

1.1.4.1 With regard to the term "sub-effective" the Respondent explained that a series of parameters influence whether a given amount of dispersant is either "effective" or "sub-effective". In particular in the letter of 19 March 2011, in the paragraph bridging pages 7/8 the following statement was made: "[...] the effect of a defined amount of a dispersant may depend on other factors, such as the nature of the dispersant, solids concentration of the aqueous solution, presence of additives. Therefore the same amount of dispersant may be "effective" under defined conditions and "sub-effective" under different conditions".

1.1.4.2 Therefore the Board concludes that the mere mention of the amount of dispersant in a dispersion is not sufficient to indicate whether or not the amount of dispersant is "sub-effective". In order to obtain the latter information for **any** dispersion a series of experiments has to be carried out.

1.1.4.3 Examples 1-3 of the patent-in-suit neither report on such experiments nor on the question whether or not the amount of dispersant used was "sub-effective".

In addition, Example 3 does not even refer to a grinding process.

1.1.4.4 Only with regard to Example 1 additional information about the viscosity behaviour was submitted by the

Respondent (see E17). However, in the oral proceedings before the Board the Respondent confirmed, that E17 and Example 1 distinguish in the kind of calcium carbonate used: in Example 1 an **undefined** calcium carbonate was used, whereas in E17 a **specific** calcium carbonate (IMERYS Raymond milled calcium carbonate flour, d_{50}=16 µm) is described.

1.1.4.5 Thus, with regard to **all** examples on file the skilled person cannot derive any information whether the dispersant was actually present in a "sub-effective" amount.

Since the examples are the only source of proof for any effect claimed, such an effect has therefore not been proven.

1.1.4.6 The objective problem vis-à-vis the closest state of the art can therefore only be seen as the provision of a method **alternative** to the one proposed in E1.

1.1.5 Finally, it has to be determined, whether the solution proposed was obvious when starting from the closest state of the art.

As stated above, E1 differs from the process according to Claim 1 only in the amount of dispersant being "sub-effective" from the beginning of the grinding step.

The coating of the surfaces of the ground material is in E1 on page 3, lines 26-31 described in the same way as it is in the patent-in-suit. Merely the total concentration of dispersant from the beginning of the grinding step onwards is lower in the patent-in-suit.

This means, that only part of the surfaces will be covered, for which, given the lack of proof, no effect has been made credible.

It is also derivable from the introductory part of E1, that grinding processes **without** a dispersant were known or alternatively that comminuted particles were **suspended with** a dispersant (E1, page 1, lines 9-25). Selecting an amount of dispersant between these two extremes, without making any effect credible, means an obvious variation to the skilled person.

1.1.6 Thus, the subject-matter of Claim 1 of the main request is not considered to involve an inventive step.

1.2 Auxiliary requests 1-3

1.2.1 Auxiliary request 1

No effect with regard to the additional feature "steepness factor" in Claim 1 has been presented. This factor is commonly known to describe the particle size distribution (see paragraph [0007] of the patent-in-suit).

Therefore, the considerations as outlined above are of relevance.

1.2.2 Auxiliary request 2

The additional features present in Claim 1 are the steps of adding a dispersant and of removing water, after the grinding stage. Both features are derivable from E1 (see page 3, lines 44-47).

Identical considerations as discussed above are of relevance.

1.2.3 Auxiliary request 3

The feature that the amount of dispersant amounts up to 0.25 wt% is met by E1, where amounts of dispersant of 0.1 and 0.15 wt% are described (see page 3, lines 3-4).

Again, the same considerations as for the main request apply.

1.2.4 Claims 1 of the auxiliary request 1-3 do therefore also not meet the requirement of Article 56 EPC.

2. Further objections raised

Given the fact that none of the requests on file meets the requirements of the EPC, the discussion of the further objections raised by the Appellant is not considered to be necessary.

Order

For these reasons it is decided that:

The patent is revoked.

The Registrar The Chairman

D. Magliano P.-P. Bracke