

Internal distribution code:

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

**Datasheet for the decision
of 7 August 2018**

Case Number: T 0507/16 - 3.3.06

Application Number: 07819665.6

Publication Number: 2099561

IPC: B01J20/28, B01J20/12, C11C1/08,
C11B3/10

Language of the proceedings: EN

Title of invention:

METHOD OF PRODUCING AMORPHOUS ADSORBENT AND ITS USE IN THE
BLEACHING OF FATS AND/OR OILS

Patent Proprietor:

Clariant International Ltd

Opponent:

Minerals Technologies Inc.

Headword:

AMORPHOUS ADSORBENT/Clariant International Ltd

Relevant legal provisions:

EPC Art. 83, 123(3)

Keyword:

Sufficiency of disclosure (main request and second auxiliary request) - no

Amendments not allowable (first and third auxiliary requests) - broadening of claim - yes

Amendment not allowable (fourth auxiliary request) - lack of clarity

Decisions cited:

T 0593/09

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 0507/16 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 7 August 2018

Appellant I: Clariant International Ltd
(Patent Proprietor) Rothausstrasse 61
4132 Muttenz (CH)

Representative: Graser, Konstanze
Clariant Produkte (Deutschland) GmbH
IPM / Patent & License Management
Arabellastrasse 4a
81925 München (DE)

Appellant II: Minerals Technologies Inc.
(Opponent) 622 Third Avenue, 38th Floor
New York, NY 10017 (US)

Representative: Bawden, Peter Charles
Bawden & Associates
4 The Gatehouse
2 High Street
Harpenden, Hertfordshire AL5 2TH (GB)

Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
4 January 2016 maintaining European Patent
No. 2099561 in amended form.**

Composition of the Board:

Chairman J.-M. Schwaller
Members: P. Ammendola
C. Heath

Summary of Facts and Submissions

- I. This appeal lies from the interlocutory decision of the opposition division to maintain European patent no. 2 099 561 in amended form.
- II. Claim 1 of the patent as granted reads as follows (the added wording with respect to that of claim 1 as originally filed is made apparent):

"1. Method for producing an adsorbent, in particular a bleaching earth, wherein a clay material having:

- a surface area of 180 to 300 m²/g;*
- a total pore volume of 0.5 to 0.7 ml/g;*
- wherein at least 60 % of the total pore volume are provided by pores having a pore diameter of at least 140 Å, at least 40 % of the total pore volume is provided by pores having a pore diameter of less than 250 Å and at least 15 % of the total pore volume are provided by pores having a pore diameter of 140 to 250 Å and less than 20 % of the total pore volume is formed by pores having a diameter of > 800 Å;*
- a SiO₂ content of between more than 60 wt.% and less than 75 wt.%;*
- an aluminum content, calculated as Al₂O₃, of between less than 12 wt.% and more than 2 wt.%;*
and
- said clay material having an amorphous structure according to XRD data;*
is activated by an activation procedure, wherein the clay is activated by contacting the clay material with an acid."

- III. The granted patent had been opposed on the grounds of, *inter alia*, insufficient disclosure (Article 100(b) EPC).

The opposition division decided to maintain the patent in amended form on the basis of the claims of the then pending third auxiliary request, claim 1 of which (hereinafter **maintained claim 1**) only differs from granted claim 1 (see II, *supra*) in the following amendment (made apparent):

"an aluminum content, calculated as Al_2O_3 , of between less than 120 wt.% and more than 2 wt.%; and".

- IV. Both the patent proprietor (appellant I, hereafter **the proprietor**) and the opponent (appellant II, hereafter **the opponent**) appealed this decision.

In a communication to the parties, the board expressed the preliminary opinion that, *inter alia*, the expression "*an amorphous structure according to XRD data*" - defining the starting clay material in all the then pending versions of claim 1 - had a clear and precise meaning but that the patent in suit did not appear to disclose any clay material fulfilling such definition. Consequently, the then pending claim requests appeared not to meet the requirements of Article 83 EPC.

- V. The proprietor replied with letter of 3 August 2018, enclosed three new sets of claims as main request, first and third auxiliary requests, and also requested as **second auxiliary request** the dismissal of the appeal of the opponent (i.e. that the patent be maintained with the sets of claims found allowable by the

opposition division, of which the wording of claim 1 is described at III, *supra*).

Claim 1 according to this **main request** only differs from granted claim 1 (see II, *supra*) in the following amendment (made apparent):

"an aluminum content, calculated as Al₂O₃, of between less than 12 wt.% and more than 28 wt.%; and".

Claim 1 according to the **first auxiliary request** only differs from claim 1 of the main request in the following amendment (made apparent):

"said clay material having an amorphous structure according to XRD data a ratio signal noise for reflexes regarding the smectite phase within a range of 1 to 1.2 and wherein the signal-to-noise ratio of the 001 reflection of the smectite particles is within a range of 1.0 to 1.1;".

Claim 1 according to the **third auxiliary request** only differs from maintained claim 1 (i.e. claim 1 according to the second auxiliary request) in the following amendment (made apparent):

"said clay material having an amorphous structure according to XRD data a ratio signal noise for reflexes regarding the smectite phase within a range of 1 to 1.2 and wherein the signal-to-noise ratio of the 001 reflection of the smectite particles is within a range of 1.0 to 1.1;".

VI. During oral proceedings on 7 August 2018, the proprietor filed a further set of claims (labelled "New

Auxiliary Request") and requested the board to consider this as fourth auxiliary request.

Claim 1 according to this **fourth auxiliary request** only differs from claim 1 of the main request (see V, *supra*) in the following amendment (made apparent):

"said clay material having an amorphous structure according to XRD data wherein in an XRD diffractogram the ratio signal noise for reflexes regarding the smectite phase is within a range of 1 to 1.2 and wherein the signal-to-noise ratio of the 001 reflection of the smectite particles is within a range of 1.0 to 1.1;".

VII. The proprietor requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request, or auxiliarily on the basis of the first auxiliary request, both requests filed with letter dated 3 August 2018, further in the auxiliary that the opponent's appeal be dismissed (second auxiliary request), or that the decision under appeal be set aside and the patent be maintained on the basis of the third auxiliary request, filed with letter dated 3 August 2018, or on the basis of the "New Auxiliary Request" (fourth auxiliary request) filed during oral proceedings.

The opponent requested that the decision under appeal be set aside and that the patent be revoked.

Reasons for the Decision

Main request

1. Lack of sufficiency of disclosure (Article 83 EPC) of the subject-matter of claim 1

1.1 It is established case law that the requirements under Article 83 EPC for sufficiency of disclosure are met if the claimed invention can be performed at the filing date of the patent by a person skilled in the art over the whole range claimed without undue burden, using common general knowledge and having regard to further information given in the patent in suit.

Of course, the assessment of sufficiency of disclosure also preliminarily requires to identify the claimed subject-matter (i.e. the invention that needs to be sufficiently disclosed) by construing the wording of the claims. As also stressed by the proprietor, the correct construction of a patent claim may also require to have regard of the remainder of the patent disclosure and the common general knowledge of the skilled person.

1.2 Claim 1 of the present main request (see V, *supra*) defines a method for producing an adsorbent by activating a clay material. This starting material is defined in the claim by several features, including that of having "*an amorphous structure according to XRD data*".

1.3 The board stresses preliminarily the following manifest and undisputed facts:

- For the skilled person, the expression "*an amorphous structure according to XRD data*" has per se a clear meaning: it requires that the XRD-diffractogram of the clay material must show no reflexes due to crystallinity visible above noise.
- The patent specification only repeats this expression (e.g. in [0040] first sentence) without giving any explicit further definition thereof.
- The patent further discloses in general (paragraph [0021]) that the starting clay material may be synthetic or preferably provided from a natural source, without however mentioning any further details either on the procedure for its synthesis or on its natural sources.
- The patent discloses certain specific commercial clay materials as apparently suitable for carrying out the invention (namely the commercially available clay materials identified as "*Tonsil[®] Supreme 526 FF*", "*Tonsil[®] Supreme 1204 FF*", "*Tonsil[®] Supreme 1206 FF*" or "*BiosilTM*"; hereinafter collectively referred to as **the clay material examples**) but neither qualifies them as having "*an amorphous structure according to XRD data*" nor provides any information as to their XRD diffractograms.

1.3.1 It is however also common ground between the parties that the XRD-diffractograms of these clay material examples contain reflexes visible above noise.

1.3.2 Hence, if the expression "*an amorphous structure according to XRD data*" in claim 1 at issue is construed according to its clear meaning, even the specific clay

materials actually mentioned in the whole patent disclosure, i.e. the clay material examples, would manifestly not be in accordance with the definition in claim 1 and, thus, would not allow to carry out the claimed method.

1.4 The proprietor has argued that the skilled reader of the expression "*amorphous structure according to XRD data*" in claim 1 at issue would rather construe it as possibly allowing for the presence of reflexes visible above noise (in the XRD-diffractograms of the starting clay materials) and would, thus, conclude that at least the clay material examples can be used to carry out the claimed method.

1.4.1 In particular, according to the proprietor, already upon reading claim 1, a skilled person would per se immediately exclude that the expression "*an amorphous structure according to XRD data*" could possibly retain its clear meaning in the context of the definition of the clay material in such claim. This because the skilled person would know that clays showing no reflexes visible above noise in their XRD-diffractogram would be "very rare".

1.4.2 The board firstly notes that this line of argument implies the acknowledgement that clays that have an XRD-diffractogram with no reflexes visible above noise do exist. Indeed, as also stated by the opponent and undisputed by the proprietor, the skilled person knows that some, in particular synthetic, clays display such sort of XRD-diffractograms.

The board secondly notes that the reasoning of the proprietor resumed at 1.4.1, *supra*, necessarily implies that the skilled person reading claim 1 would consider

immediately apparent that claim 1 cannot possibly be directed to a method using such "very rare" clays only.

However, this appears a subjective allegation of the proprietor that has not been supplemented with any supporting evidence or any more detailed reasoning apt at rendering apparent the plausibility of such allegation.

Moreover, the proprietor's line of reasoning does not expand as to why the alleged common general knowledge as to the number of these synthetic clays with no crystallinity reflexes in their XRD-diffractogram, should provide a cogent reason to exclude the clear meaning of the expression "*an amorphous structure according to XRD data*", although used in claim 1 to define not simply a clay, but rather a "*clay material*", i.e. possibly a mixed material in which only some portions are constituted by clay.

Hence, the board finds the proprietor's argument summarised at 1.4.1, *supra*, unconvincing.

- 1.4.3 The proprietor's further submission in support of a construction of the relevant expression also allowing for the presence of reflexes visible above noise, is that the skilled person would find this alternative meaning implicitly defined not only in the description of the granted patent (wherein claim 1 as granted also requires the "*amorphous structure according to XRD data*", see II, *supra*), but also in the identically worded passages of the patent application as originally filed (in which original claim 1 already contained the same expression, see II, *supra*).

In particular, the skilled person would find this implicit definition in the second and third paragraphs on page 12 of the patent application as originally filed, as well as in the identically worded paragraphs [0040] and [0041] of the granted patent (hereafter reference is only made to these paragraphs of the granted patent). In particular, the skilled person would note that [0040] starts with two sentences, each stating a general definition of the XRD-diffractograms of the clay materials "*used in method of the invention*", i.e. the sentences reading:

"The clay material used in the method according to the invention has an amorphous structure according to XRD data. In an XRD-diffractogram of the clay material used in the method of the invention the reflexes are hardly visible above noise."

Hence, in the view of the proprietor, it would be apparent that the second sentence in [0040] was just the definition of what the inventors always intended to describe by means of the expression "*an amorphous structure according to XRD data*".

- 1.4.4 The board notes however that the second sentence of [0040] is not explicitly worded as a clarification of the meaning of the immediately preceding sentence.

On the contrary, the second sentence in [0040] appears rather to provide a second different definition of the XRD-diffractogram of the suitable clay materials that is simply broader than that given in the first sentence: whereas in the first sentence "*an amorphous structure according to XRD data*" clearly excludes the possible presence of any visible reflexes in the XRD-diffractogram, the definition of the reflexes as

"*hardly visible above noise*" in the second sentence undisputedly covers the case in which no reflexes are visible above noise as well as that in which reflexes of limited intensities are indeed visible.

Also the passages in the remainder of [0040] and the whole of [0041] describing clay materials which may or not show reflexes visible above noise in their XRD-diffractograms (since they describe signal-to-noise ratios possibly larger than 1), appear to simply define preferred embodiments of the clay material defined in the second sentence in [0040].

Similarly, also the clay material examples - which undisputedly show crystallinity reflexes visible above noise in their XRD-diffractogram - appear to be embodiments of the clay material defined in the second sentence in [0040] (only).

In view of the above, the board also holds that there is no explicit or implicit teaching in [0040] and [0041], or in the remainder of the description of the patent, that necessarily implies that the clear expression "*an amorphous structure according to XRD data*" has been used in the patent in suit with the different, broader meaning expressed in the second sentence of [0040].

Hence, the board comes to the conclusion that the patent as a whole (and, thus, also the first two sentences in [0040]) appear to simply provide two different definitions of the clay material of the invention (in terms of their XRD-diffractogram):

- according to the first (and narrower) definition, the clay material must show no reflexes visible above noise (this is the alternative expressed by

the expression "*an amorphous structure according to XRD data*" as present e.g. in the first sentence of [0040], as well as in the version of claim 1 under consideration);

- according to the second (and broader) definition the clay material may or may not show reflexes visible above noise (this is the alternative expressed in the second sentence of [0040], whose preferred embodiments are described in the remainder of [0040] and in [0041], as well as represented by the clay material examples).

The board considers it appropriate to stress that the presence of these two different definitions in the description of the patent, while the corresponding version of claim 1 as granted (and also in claim 1 as originally filed) only refer to the narrower definition, and necessarily implies that the part of the description in the granted patent disclosing the broader second definition of the clay material is irrelevant for the interpretation of the wording of the claim, since it relates to embodiments of the invention for which the applicant has never requested protection, for whatever reason. The broader definition in the description may thus have allowed the appellant to claim protection also for these embodiments, yet this does not necessarily imply that in the absence of any explicit definition to this extent, the clear expression "*an amorphous structure according to XRD data*" has been used in the patent with a different meaning.

Accordingly, the board comes to the conclusion that the above proprietor's argument is not convincing either.

1.4.5 In its submissions as to the construction of the relevant expression in claim 1, the proprietor also referred to the case law in the decision **T 0593/09** (unpublished in the OJ) addressing the requirement of sufficiency of disclosure in the case where a claim contains an ill-defined ("unclear", "ambiguous") parameter.

However, the patent in suit is found to provide no different definition of the above term. Hence, this case law is found of no relevance to the present case.

1.4.6 It follows from the above considerations that the expression "*an amorphous structure according to XRD data*" in claim 1 at issue retains its clear and precise meaning, with the inevitable consequence that the only clay materials actually identified in the patent in suit as suitable starting clay materials cannot be used to carry out the method of claim 1 at issue.

1.4.7 Therefore, the board concludes that the patent in suit does not contain sufficient information as to how to obtain or prepare a clay material with the "*amorphous structure according to XRD data*", as required, for carrying out the method of claim 1 of the main request. Hence, the disclosure provided by the patent in suit is found insufficient in respect of this method.

1.5 In the board's judgement based on the above considerations, the subject-matter of claim 1 of the main request does not meet the requirements of Article 83 EPC and this request cannot be allowed.

First auxiliary request

2. Broadening of the claimed subject-matter (Article 123(3) EPC)

2.1 The board stresses again that claim 1 as granted requires the starting clay material to have "*an amorphous structure according to XRD data*".

Moreover, the considerations under points 1.3 to 1.4.5, *supra*, as to the construction of this expression in claim 1 of the main request apply identically to the same expression in claim 1 as granted.

Hence, the conclusion that the expression "*an amorphous structure according to XRD data*" in claim 1 of the main request requires the starting clay materials to show no reflexes visible above noise in their XRD-diffractogram, also applies to claim 1 as granted.

2.2 In claim 1 of the first auxiliary request, the expression "*an amorphous structure according to XRD data*" has been replaced by the indication that the clay material has:

- (i) a signal-to-noise ratio of the reflexes regarding the smectite phase within a range of 1 to 1.2, and
- (ii) a signal-to-noise ratio of the 001 reflection of the smectite particles within a range of 1.0 to 1.1.

These features correspond to the preferred embodiments of the clay material defined in the second sentence of [0040] of the patent specifications that, as already observed under 1.4.4, *supra*, may also show reflexes visible above noise in their XRD-diffractogram (since

they describe signal-to-noise ratios possibly larger than 1).

2.3 Hence, it is immediately apparent that the amendments identified at 2.2, *supra*, cause the definition of the clay material in claim 1 at issue to embrace materials that were not embraced by the corresponding definition of granted claim 1. This results in a broadening (or shifting) of the scope of protection of the claimed subject-matter.

2.4 It follows from the above considerations that the subject-matter of claim 1 of the first auxiliary request does not meet the requirements of Article 123(3) EPC and this request cannot be allowed either.

Second auxiliary request (dismissal of the appeal of the opponent)

3. Sufficiency of disclosure (Article 83 EPC) of the subject-matter of claim 1

In claim 1 according to this request, i.e. in claim 1 as maintained, the definition of the starting clay material requires, *inter alia*, that it must have "*an amorphous structure according to XRD data*".

3.1 The considerations at points 1.3 to 1.4.5, *supra*, as to the construction of this expression in claim 1 of the main request, apply identically to the same expression in claim 1 of this auxiliary request.

3.2 Hence, also the conclusion that the expression "*an amorphous structure according to XRD data*" in claim 1 of the main request requires the starting clay materials to show no reflexes visible above noise in

their XRD-diffractogram, also applies to claim 1 at issue.

3.3 Accordingly, this claim suffers from the same lack of sufficient disclosure that has been found to already affect claim 1 of the main request, because the patent in suit does not contain sufficient information as to how to obtain or prepare a clay material with the "*amorphous structure according to XRD data*", as also required for carrying out the method of claim 1 of the second auxiliary request.

3.4 In the board's judgement based on the above considerations, also the subject-matter of claim 1 according to the second auxiliary request does not meet the requirements of Article 83 EPC and this request cannot be allowed.

Third auxiliary request

4. Broadening of the claimed subject-matter (Article 123(3) EPC)

Also in claim 1 of this request, similar to claim 1 of the first auxiliary request, the expression "*an amorphous structure according to XRD data*" originally present in claim 1 as granted has been replaced by the features "(i)" and "(ii)" already identified and construed by the board under 2.2, *supra*.

4.1 Hence, also for the subject-matter of claim 1 under consideration it is immediately apparent to the board that these amendments cause the definition of the clay material to embrace materials that were not encompassed by the corresponding definition in granted claim 1 as construed by the board (see 2.1 and 2.3, *supra*). This

again results in a broadening (or shifting) of the scope of protection of the claimed subject-matter.

- 4.2 It follows from the above considerations that also the subject-matter of claim 1 of the third auxiliary request does not meet the requirements of Article 123(3) EPC and this request cannot be allowed.

Fourth auxiliary request

5. Lack of clarity arising from the amendments in claim 1

Claim 1 according to this request comprises an amended description of the starting clay material in terms of its XRD-diffractogram (see the amended portion of such claim recited at VI, *supra*).

According to such an amended description, the clay material is firstly required to show no visible reflexes in its XRD-diffractogram (reference is made again to the reasons given at 1.3 to 1.4.6, *supra*, that have brought the board to the conclusion that the clear meaning of the expression "*an amorphous structure according to XRD data*" is retained also in the context of the patent in suit) and then further specified to also be (see in the amended description the term "*wherein*" appearing twice) a clay material that may instead undisputedly also show visible reflexes in its XRD diffractogram (since the signal-to-noise ratios are defined to possibly be larger than 1).

- 5.1 Hence, the new description of the starting clay material combines definitions (in terms of the clay material's XRD-diffractogram) of different meanings in a manifestly discordant manner: i.e. by identifying clay materials whose definitions allow for visible

reflexes in the XRD-diffractogram as subgroups of the same clay materials for which the expression "*having an amorphous structure according to XRD data*" clearly excludes the presence of such visible reflexes.

- 5.2 Accordingly, the board finds that the amendments introduced in claim 1 of the fourth auxiliary request create a lack of clarity, with the consequence that the subject-matter of claim 1 of this request does not meet the requirements of Article 84 EPC and also this last claim request of the proprietor cannot be allowed.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



D. Magliano

J.-M. Schwaller

Decision electronically authenticated