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Datasheet for the decision of 9 September 2016

Case Number: T 1642/13 - 3.3.03

Application Number: 99922271.4

Publication Number: 0998522

IPC: C08K3/26, C08K9/04, C08K13/06, C08J5/18

Language of the proceedings: EN

Title of invention:
USE OF PARTICULATE CARBONATES IN THERMOPLASTIC FILM COMPOSITIONS

Patent Proprietor:
Imerys Minerals Limited

Opponents:
Omya International AG
SA REVERTÉ Productos Minerales

Headword:

Relevant legal provisions:
RPBA Art. 13(1), 13(3)
EPC Art. 83, 54, 111(1)

Keyword:
Late-filed document - admitted (yes and no)
Late-filed request - justification for late filing (yes)
Sufficiency of disclosure - main request (yes)
Novelty - main request (yes)
Appeal decision - remittal to the department of first instance (yes)

Decisions cited:
G 0003/14, T 0122/10

Catchword:

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Case Number: T 1642/13 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 9 September 2016

Appellant: (Patent Proprietor)	Imerys Minerals Limited John Keay House St. Austell Cornwall PL25 4DJ (GB)
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Representative:	Ungria López, Javier Avda. Ramón y Cajal, 78 28043 Madrid (ES)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 15 July 2013 revoking European patent No. 0998522 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	F. Rousseau
Members:	O. Dury
	C. Brandt

Summary of Facts and Submissions

I. The appeal by the patent proprietor lies against the decision of the opposition division revoking European patent No. EP 0 998 522, based on application No. 99 922 271.4 corresponding to the international application No. WO 1999/061521, which claims two priorities dated 22 May 1998 and 4 September 1998.

II. The claims of the application as filed which are relevant to the present decision read as follows:

"1. A method of producing a breathable film which comprises the steps of:

(a) producing an inorganic filler by treating particles of an inorganic particulate material comprising an alkaline earth metal carbonate compound by reaction with a hydrophobising surface treatment agent comprising one or more aliphatic carboxylic acids having at least 10 chain carbon atoms to produce a hydrophobic coating on the particles under conditions such that the inorganic filler produced has a total surface moisture level comprising moisture adsorbed on the particles and trapped within the hydrophobic coating thereon of not greater than 0.1% by weight based on the dry weight of the inorganic particulate material;

(b) producing a filled thermoplastic composition by mixing the inorganic filler produced in step (a) with a heated thermoplastic polymer; and

(c) shaping the composition produced in step (b) by heat processing to form a film product."

"2. A method according to claim 1 and wherein the inorganic filler produced in step (a) has a moisture pick up susceptibility such that its total surface

moisture level is less than 0.1% by weight even after exposure to an atmosphere of 80% or more relative humidity for 40 hours at a temperature of 20°C."

"3. A method according to claim 1 or claim 2 and wherein the inorganic filler produced in step (a) has a moisture pick up susceptibility such that its total surface moisture level is not greater than about 0.085% by weight based on the dry weight of the inorganic particulate material even after exposure to an atmosphere of 80% or more relative humidity for 40 hours at a temperature of 20°C."

III. The application had been refused by the examining division for lack of clarity because i) the wording "under conditions such that" in claim 1 lacked clarity "per se" and because ii) an essential technical feature, identified by the division as a drying step to be applied immediately before the coating step, was missing in claim 1. With decision T 1141/03, present Board 3.3.03, in a different composition, decided that the reasons given by the examining division did not justify the refusal of the application and remitted the case to the first instance for further prosecution.

IV. A patent was granted on the basis of 20 claims, of which claims 1-3 were identical to claims 1-3 as originally filed. Claims 4-20 were dependent on claim 1. Claim 20, which was not present in the original set of claims, read as follows:

"20. A method according to any one of claims 1 to 18 wherein the surface moisture level of the inorganic filler produced in step (a) is determined by Karl Fischer titration."

V. An opposition against the patent was filed, in which the revocation of the patent was requested on the grounds of Article 100(a) EPC (lack of novelty and lack of an inventive step) and Article 100(b) EPC.

VI. The following documents were *inter alia* cited in the opposition division's decision:

D1: WO 99/28050
D3: WO 97/04955
D17: CA-C-2 260 794
D18: Plastics Additives, An Industrial Guide, Second Edition, E. Flick, page 160 (no publication date)
D18A: Plastics Additives, An Industrial Guide, Second Edition, E. Flick, (1993), pages 154-155
D23: Datasheet of Supercoat®, ECC International (1 page)
D24: Technical experiments by M. Buri, filed by opponent 1 with letter of 23 October 2012

In that decision, which was based on a main request (granted patent) and five auxiliary requests, the opposition division *inter alia* held that:

- the main request fulfilled the requirements of sufficiency of disclosure. Novelty was acknowledged over *inter alia* D1 and D3, the latter because the "step of drying the particle is not disclosed in D3". However, granted claim 1 was anticipated by example 1 of D17 in view of evidence D18 and D18A;
- auxiliary request 5 was not allowable because the process defined in claim 1 thereof, which was identical to granted claim 3 (and to claim 3 of the application as filed), did "not fulfil the criteria of Article 83 EPC";

- D23, which was late-filed, was not admitted to the proceedings because it beared no publication date.

VII. The patent proprietor (appellant) appealed the above decision. With the statement setting out the grounds for the appeal, the appellant requested that the opposition division's decision be set aside and the patent be maintained as granted (main request) or, alternatively, that the patent be maintained in amended form according to any of auxiliary requests 1-7 filed therewith. Also, remittal to the first instance to deal with the issue of inventive step was requested. In addition to D23, other documents were further simultaneously filed, among others:

D27: USPTO's assignment record for the Supercoat trademark

VIII. With their rejoinders dated 4 June 2014 and 4 April 2014 opponents 1 and 2 (respondents 1 and 2, respectively) both requested that the appeal be dismissed. Opponent 1 further requested that *inter alia* D23, D27 and some of the patent proprietor's auxiliary requests not be admitted to the proceedings. The following document were *inter alia* simultaneously submitted by opponent 2:

D30: Römpps Chemie-Lexikon, 1974, pages 470-472 and 2039
D31: Telefax of 1 May 1995 comprising specifications for Supercoat (2 pages)

IX. With letter of 19 December 2014 the appellant requested that the patent be maintained in amended form according to either the main request or any of 14 auxiliary requests filed therewith. It was further requested that

D31 not be admitted to the proceedings.

Claim 1 of the main request corresponded to granted claim 1 in which the following sentence was added at the end: "wherein the surface moisture level of the inorganic filler produced in step (a) is determined by Karl Fischer titration.".

X. With letter of 4 December 2015 the parties were informed that the Board was about to start examining the appeal and were asked to submit, if they so wished, any reply to that communication as soon as possible, so that the Board may, if appropriate, take their response into account when starting the examination of the appeal.

XI. With letter of 9 December 2015 the parties were summoned to oral proceedings to be held on 9 September 2016.

XII. With letter of 30 December 2015 opponent 1 submitted further arguments and requested that the patent proprietor's pending requests not be admitted to the proceedings.

XIII. With a communication dated 22 July 2016, the Board set out its preliminary view of the case. In section 6.2, third subsection, the question was in particular posed whether, in the absence of any reference to "surface moisture level" in steps a-c, the amendment made to granted claim 1 ("wherein the surface moisture level ... by Karl Fischer titration") effectively limited the scope of granted claim 1.

XIV. With letter of 9 August 2016 the patent proprietor made further submissions and requested that the patent be

maintained as granted (main request) or, alternatively, that the patent be maintained in amended form according to any of auxiliary requests 1-10 filed therewith, of which only auxiliary request 2 is relevant to the present decision.

Claims 1-18 of auxiliary request 2 were identical to granted claims 1 and 4-20, respectively (granted claims 2-3 were deleted, the dependency of granted claims 4-20 being adapted accordingly).

XV. With letter of 18 August 2016 opponent 1 submitted further arguments and requested that the pending requests be not admitted.

XVI. During the oral proceedings before the Board, which were held on 9 September 2016 in the presence of all parties, the Board came to the conclusion that the subject-matter of granted claim 1 was sufficiently disclosed and that the subject-matter of granted claims 2 and 3 was not sufficiently disclosed according to Article 100 (b) EPC. As a consequence, the patent proprietor withdrew the then pending main request (granted patent) and maintained auxiliary request 2 filed with letter of 9 August 2016 as new main request. Also, opponents 1 and 2 requested that, should the Board come to the conclusion that any of the patent proprietor's requests was admissible and fulfilled the requirements of sufficiency of disclosure and novelty, the case be remitted to the first instance for further prosecution.

XVII. At the end of the oral proceedings the Board announced its decision.

XVIII. The appellant's arguments, insofar as relevant to the operative main request (filed as auxiliary request 2 with letter of 9 August 2016), may be summarised as follows:

Admissibility

(a) The main request and auxiliary request 2 filed with letter of 9 August 2016 were submitted in order to take into account the provisional opinion of the Board. Said auxiliary request 2 in particular aimed at removing the opponents' objections concerning sufficiency of disclosure of granted claims 2 and 3. The filing of those requests did not complicate the case and could not be related to issues that the opponents could not deal with since those requests only contained granted claims, as was the case for the main request filed together with the statement of grounds of appeal and defended before the opposition division. In that respect, the Karl Fischer method according to granted claim 20 was used to determine the total surface moisture content mentioned in granted claim 1. Considering that the pending main request had been filed one month before the oral proceedings, the opponents were not taken by surprise. For those reasons, the Board should use its discretion to admit the main request pursuant to Article 13(1) RPBA.

Sufficiency of disclosure

(b) It was derivable from the whole patent specification that the aim of the patent in suit was to minimise the amount of moisture that evolve from the filler to avoid the creation of voids when making films. Therefore, the parameter "total

surface moisture level" specified in operative claim 1 was directed to the amount of moisture evolving from the filler at temperatures used for making films.

(c) The sole temperature disclosed in the patent in suit was 195 °C, which was a temperature representative of usual working conditions. It was indicated in the patent in suit that the "total surface moisture level" could be measured by Karl Fischer titration or using a microbalance. As it was obvious for the skilled person that the Karl Fischer titration could not be carried at 195 °C the skilled person would understand that the water vapour evolving from the filler heated at 195 °C should be transferred to a measuring unit by means of a nitrogen stream, as already explained during the oral proceedings before the opposition division. Also, opponent 1 had had no difficulty to measure the "total surface moisture level" using a microbalance in D24.

(d) The patent in suit provided sufficient guidance how reliably to achieve a "total surface moisture level" as defined in claim 1. It was in particular explicitly stated in the patent specification that the level of dispersant should be minimised and that direct heating in the second step of drying of the filler should be avoided, which was confirmed by the comparative examples and the conclusions drawn therefrom given in the patent.

Novelty over D17, D3 and D1

(e) Whereas it was indicated in example 1 of D17 that the calcium carbonate filler Supercoat was surface

treated with 1 wt.% stearic acid, the chemical analysis given either in D18 or D31 did not contain any trace of stearic acid. Besides, since all components indicated in said chemical analysis added up to 99.6 wt.%, it was not possible that that material further contained 1 wt.% stearic acid. In view of the above, the chemical analysis of D18 or D31 were related to the uncoated filler. There was no evidence on file that it was usual to eliminate the coating before doing a chemical analysis as given in D18 or D31, as argued by the opponents.

The values of the physical properties of Supercoat disclosed in D18 and D31 were identical. However, whereas D31 explicitly indicated that some of those values were related to the uncoated filler and some to the coated filler, D18 did not. Therefore, it could not be excluded that also the chemical analysis of D18 referred to the uncoated filler.

(f) It was derivable from page 19 of D3 that a coating on the filler was at most optional. The teaching of D3 related to coated fillers was to control the amount of volatiles by degassing the mineral during the compounding, as taught in paragraph 10 of the patent in suit. It was further unclear whether the amount of 100 ppm to 500 ppm volatiles given on page 19, lines 30-34 of D3 was directed to the coated or uncoated filler.

D3 further failed to disclose a method in which the step of producing the inorganic filler resulted in the organic filler having a total surface moisture content of not greater than 0.1 wt.% followed by a step in which the inorganic filler is mixed with

the polymer.

Therefore, D3 did not disclose directly and unambiguously the combination of features according to claim 1.

(g) D1 failed to disclose specific measures to obtain a water content according to operative claim 1. Therefore, it could not be excluded that the fillers prepared in D1 had a water content outside the range of operative claim 1, as e.g. shown in the comparative examples of the patent in suit.

XIX. The respondents' arguments, insofar as relevant to the operative main request (filed as auxiliary request 2 with letter of 9 August 2016), may be summarised as follows:

Admissibility

(a) The main request was late filed and did not satisfy the stipulations of Article 12(2) RPBA. Following decision T 122/10 (reasons 3.7; it was clarified during the oral proceedings that decision T 120/10 mentioned in writing was not correct), it should not be permitted to allow the patent proprietor to submit anew a request which had already been submitted with the statement of grounds of appeal but which had been withdrawn later on (with letter of 19 December 2014). This was particularly true in the present case because the patent proprietor was in fact reverting to a request which was broader in scope, since the introduction of granted claim 20 had allegedly limited the scope of granted claim 1. It should further be considered that the patent proprietor constantly changed its requests

throughout both the opposition and the appeal proceedings, which was not an efficient conduct of the proceedings.

(b) Considering that
- all the objections related to sufficiency of disclosure submitted in appeal had already been submitted in the first instance proceedings, in particular those put forward against granted claims 2 and 3, which had led the opposition division to decide that the then pending auxiliary request 5 was not allowable;
- the issue related to the meaning of the various terms used in the patent in suit in relation to water content, which had been identified in the Board's second communication dated 22 July 2016, was not a new issue brought in by the Board but had been already amply discussed in the opposition proceedings and addressed in opponent 1's letter dated 30 December 2014;
- the patent proprietor had neither reacted to the opponents' rejoinders to the statement of grounds of appeal nor to the Board's first communication of 4 December 2015;

there was no justification for filing the operative main request for the first time so late in the proceedings. Therefore, it should not be admitted pursuant to Article 13(1) RPBA.

Sufficiency of disclosure

(c) The patent in suit failed to define the parameter "total surface moisture level" mentioned in claim 1 and it was not clear whether it meant the total moisture level of the whole filler (within the particle, at its surface and in the coating) or if

it was limited to the moisture level at the surface and in the coating (excluding the moisture possible comprised within the particle). In respect of the latter, the Karl Fischer titration method did not allow to identify the amount of moisture that was present only within the particle. Also, should the particle comprise crystallisation water, which was possible as shown in D30, said water would not be taken into account by the "total surface moisture level".

Claim 1 was formulated as a result-to-be achieved ("under conditions such that") and, in order to carry out the invention, the skilled person should be in a position to know if said "total surface moisture level" was indeed achieved. Also, the skilled person should know if he is working within or outside the scope of the claims. In the present case, the ambiguity was such as to amount to a lack of sufficiency.

(d) The patent in suit did not define when a coating was "hydrophobic" as required by claim 1. Very low amounts of the treating agent would not make a coating "hydrophobic", as shown in D24. Also, sufficient hydrophobicity was required for the purpose of the invention.

(e) The patent in suit did not define the working conditions to be used e.g. in terms of drying temperature, time period, humidity to prepare the required reduced moisture level. Since so many options were indicated in the patent in suit, the skilled person had no technical guidance how reliably to carry out the invention. Also, considering the amounts of adsorbed water given in

Table 2 of the patent in suit only sample 5 of example 1 was according to the invention. However, the other samples, which were all carried out according to the general teaching of the patent in suit, failed to lead to a moisture level of "not greater than 0.1 % by weight" according to claim 1. Therefore, the patent in suit failed to provide sufficient guidance to carry out the invention with a good chance of success.

(f) It was not possible to perform the Karl Fischer titration method as described in the description of the patent in suit at a temperature of 195 °C, which was however said to be used in the examples of the patent in suit.

Novelty over D17, D3 and D1

(g) The subject-matter of claim 1 was anticipated by example 1 of D17 read in the light of either D18/ D18A or D31, which disclosed that the "Supercoat" calcium carbonate used in example 1 of D17 exhibits a total surface moisture level of not greater than 0.1 % by weight.

D18 and D31 both related to a coated filler and there was no reason to believe that the chemical analysis given in those documents was that of the uncoated material. In the data reported in D18A for the filler Kotamite, it was specifically indicated that a property (pH) was related to the uncoated material. The absence of such an indication in D18 for Supercoat implied that all the data reported therein characterised the coated material.

During the oral proceedings before the Board,

opponent 1 argued that it was usual in the art to carry out the chemical analysis of a filler after eliminating the hydrophobic coating. Therefore, it was not surprising that the chemical analysis reported in either D18 or D31 did not reflect the presence of stearic acid. Also, as indicated in D18, Supercoat was a product of the company ECC America Inc., which was the former name of opponent 1's company. Therefore, opponent 1 was to know that the chemical analysis given in D18 was that of the coated material.

During the oral proceedings before the Board opponent 2 maintained, at the request of the Board, that D23 should not be admitted to the proceedings.

(h) D3 was directed to films comprising a microporous core layer containing at least a thermoplastic polymer and a particulate filler. The formation of micropores was detailed on pages 18-19 of D3, in which it was taught that the amount of water and/or volatiles should be reduced. It was further indicated on page 19, lines 8-10 that calcium carbonate coated with stearic acid was a suitable particulate filler. Also, it was taught on page 19, lines 25-34 that the amount of water and/or volatiles in the starting materials could be adjusted and suitably be between 100 ppm and 500 ppm. Therefore, the subject-matter of claim 1 was not novel.

(i) The manufacturing and drying process described in D1 was identical to the manufacturing and drying process taught in the patent in suit. Therefore, D1 inevitably anticipated the subject-matter of

claim 1.

XX. The appellant/patent proprietor requested that the decision under appeal be set aside and that the case be remitted to the first instance for further prosecution on the basis of the main request corresponding to auxiliary request 2 filed with letter dated 9 August 2016.

Respondents 1 and 2 (opponents 1 and 2) requested that the appeal be dismissed.

Reasons for the Decision

Main request

1. Admissibility

1.1 The operative main request was filed as auxiliary request 2 with letter of 9 August 2016, i.e. one month before the oral proceedings before the Board and after the communication of the Board setting out its preliminary view of the case had been received. Therefore it represents an amendment to a party's case and its admission to the proceedings undergoes the stipulations of Articles 13(1) and 13(3) RPBA.

1.2 As can be seen from the file history, the patent proprietor's first main request in appeal was to maintain the patent as granted. Then the main request was amended with the response to the rejoinders of opponents 1 and 2 by inserting the subject-matter of granted claim 20 into claim 1. This has been indicated to be in reply to the criticism by opponent 1 that the

parameter "moisture content" was not sufficiently disclosed. Following the Board's preliminary written opinion the patent proprietor reverted to the main request submitted with the statement of grounds of appeal. It is credible that it was made in view of the Board's own remark that the insertion of the expression "surface moisture level" contained in granted claim 20 alongside the expression "total surface moisture level" already present in claim 1 could give rise to new issues that needed to be discussed for the first time on appeal. This constitutes, in the Board's view, a proper justification for deleting the amendment made and therefore reverting in a first step to the main request submitted with the statement of grounds of appeal, i.e. the patent as granted.

1.3 The operative main request is based on granted claims 1 and 4-20 (the other two granted dependent claims 2 and 3 were deleted). Considering that the patent proprietor's main request submitted together with the statement of grounds of appeal was the maintenance of the patent as granted, which was also the main request defended before the opposition division, the opponents have had ample time during the proceedings to deal with the other claims of the operative main request, as can be seen e.g. from the arguments put forward in the opponents' rejoinders to the statement of grounds of appeal in the light of their earlier submissions. Consequently, the admission to the proceedings of the operative main request may not raise issues which the other parties or the Board cannot reasonably be expected to deal without adjournment of the oral proceedings. Since the main request was further filed one month before the oral proceedings before the Board, the opponents had ample time to prepare their case. Therefore, there was no reason for the Board not to

admit the main request pursuant to Article 13(3) RPBA.

1.4 It is correct that, as argued by the opponents, the patent proprietor could have filed the operative main request earlier in the proceedings e.g. together with the statement of grounds of appeal (in particular considering the objection of lack of sufficient disclosure retained by the opposition division against the then pending auxiliary request 5), in reply to the opponents' rejoinders to the statement of grounds of appeal (in which objections of lack of sufficiently were raised against granted claims 2-3), or in reply to the Board's first communication dated 4 December 2015 (asking the parties to file any submissions as soon as possible to allow the Board to take them into account). However, there is no evidence of a deliberate abuse of procedure by the patent proprietor. The deletion of dependent claims 2 and 3 as granted is an appropriate answer to the objection of insufficient disclosure raised by the opponents, which can neither be held to be against procedural economy nor to raise complex issues. In addition, considering the amendment to claim 1, the patent proprietor had argued in writing that the Karl Fischer method mentioned in granted claim 20 was a method used to measure the total surface moisture content, from which can be inferred that the patent proprietor considered the expressions "surface moisture level" determined by Karl Fischer as indicated in granted claim 20 and "total surface moisture level" mentioned in granted claim 1 as to correspond to the same technical feature. Therefore, it could not be concluded that the insertion (or the deletion) of granted claim 20 into granted claim 1 changed the scope of debates i.e. ran counter procedural economy.

1.5 Decision T 122/10, which was relied upon by opponent 1, dealt with the admission to the proceedings of requests filed for the first time during the oral proceedings before the Board (see e.g sections 3.4 and 3.9 of the reasons), which is a different factual situation as the present one in which the operative main request was submitted one month before the oral proceedings. Also, the Board held in decision T 122/10 that "the framework of the appeal would have been altered completely if the new requests were admitted" (section 3.6 of the reasons), which is not the case here, as explained in section 1.4 above. Finally, as can be derived from the preceding sections, the present decision does not deviate from T 122/10 (section 3.7 of the reasons) since the admission of a late filed request is subject to the Board's discretion pursuant to Article 13(1) RPBA.

1.6 In view of the above, the Board considers that the filing of the operative main request as auxiliary request 2 with letter of 9 August 2016 constituted a *bona fide* reply to the issues identified in the Board's communication of 22 July 2016 regarding *inter alia* the admission to the proceedings of the then pending main request or the issue of sufficiency of granted claims 2-3 (see sections 6.2 and 7.5 of said communication).

1.7 For those reasons, the main request was admitted to the proceedings pursuant to Article 13(1) RPBA.

2. Sufficiency of disclosure

2.1 In order to meet the requirements of sufficient disclosure, an invention has to be disclosed in a manner sufficiently clear and complete for it to be

carried out by the skilled person, without undue burden, on the basis of the information provided in the patent specification, if needed in combination with the skilled person's common general knowledge. This means in the present case that the skilled person should be in particular able to carry out a method according to claim 1.

2.2 Total surface moisture level

The method according to operative claim 1 comprises three steps (a) to (c) and, in order to carry out step (b), the skilled person has to be able to prepare an appropriate filler as defined in step (a), which is in particular defined in that it is produced by treating particles of an inorganic filler with a surface treatment agent under conditions such that it has a "total surface moisture level" comprising moisture adsorbed on the particles and trapped within the hydrophobic coating thereon of not greater than 0.1% by weight based on the dry weight of the inorganic particulate material". In that respect the patent in suit teaches that such a moisture level may be obtained by using an inorganic filler having a very low level of moisture and coating said inorganic filler with a specific class of hydrophobic compound while taking care not to introduce moisture during said treatment (paragraphs 40 to 46 of the patent in suit).

2.2.1 The opponents argued that the information provided by the patent to determine the "total surface moisture level" specified in claim 1 was not sufficient to prepare reliably a filler according to step (a) and, thus, to carry out the invention.

2.2.2 The parties in particular disputed how the term "total surface moisture level" was to be read and the opponents argued that that term was so ambiguous as to amount to insufficiency in the sense of Article 83 EPC.

a) In that respect, it was not contested by the patent proprietor that no definition of that term is provided in the patent in suit. Nor was it shown to have an accepted definition in the art. Also, from the wording of the claim itself, it is not clear whether or not the "total surface moisture level" is limited to the moisture "adsorbed on the particles and trapped within the hydrophobic coating" as indicated in claim 1. In that respect, the presence of the term "comprising" in claim 1 does not seem to support the latter interpretation and it was disputed by the parties if e.g. crystallisation water was comprised in the "total surface moisture level".

According to standard practice, in opposition proceedings, when a claim contains a feature which has an ambiguous meaning, as in the present case for the reasons indicated in the preceding paragraph, the wording of that claim should be read in a technically sensible way and taking into account the whole disclosure of the patent specification.

In that respect, various terms are used in the patent in suit in respect of moisture level, such as "total surface moisture level", "surface moisture level", "adsorbed water"/"adsorbed water content", "moisture adsorbed on the particles" or "adhered surface moisture" (see e.g. paragraphs 11, 13, 20, 21, 29, 40, 42, 43, 45, 48, 53, 84, 86, 87, 92; Table 2; Fig. 2). However, the gist of the invention is, as may in particular be derived from page 3, lines 18-23 and

page 5, lines 11-17 of the patent in suit, to minimise the amount of water evolving from the surface treated inorganic filler prepared according to step (a) according to claim 1 during the production of breathable films according to step (c) of claim 1 in order to reduce the amount of defects (macroscopic voids) in the films so produced. In view of that problem, the skilled person would understand that the critical water content is the amount of water evolving from the particulate filler upon compounding to a film.

With that in mind, it is further noted that the invention is in particular illustrated in the patent in suit by various samples of example 1 in which the amount of "adsorbed water" is measured by Karl Fischer titration and heating the samples at 195 °C (paragraph 86; Table 2). Further, according to paragraph 53 of the patent specification a Karl Fischer titration apparatus may be used to determine the "surface moisture level" of a filler. Also, the conclusion drawn in paragraph 91 indicates that the wording "surface moisture level" and "adsorbed water" are used as equivalent in the patent in suit and further makes a direct correlation between the minimisation of the "surface moisture level"/"adsorbed water" and the reduction of voids in the films produced using the coated fillers. In view of those passages of the patent specification, it may further be concluded that the terms "total surface moisture level" (claim 1), "surface moisture level" (claim 18) and "adsorbed water" (example 1, samples 1-11) are used interchangeably i.e. those terms have the same meaning in the patent in suit. Besides, it is also taught that that moisture level may be determined by e.g. Karl Fischer titration and heating the samples at 195 °C.

In view of the above, the Board came to the conclusion that the "total surface moisture level" according to claim 1 is to be read as the amount of water evolving from the particulate filler upon compounding to a film, which may be achieved by heating the samples at 195 °C in order to simulate the temperature conditions encountered during preparation of a film and measuring by Karl Fischer titrimetry the amount of water evolved.

2.2.3 During the proceedings, the opponents contested that the Karl Fischer titration method mentioned in the patent in suit was sufficiently disclosed.

a) In that respect, it is correct that the information regarding the Karl Fischer titration method and how to carry it out provided in paragraphs 54-57 of the patent in suit teaches that "the sample is added to a pyridine-methanol solution" and no reference to any temperature is given. However, that expression is to be found in paragraph 55 that merely explain in general terms the Karl Fischer titration, as can be seen from the wording "In coulometric Karl Fischer titration, the sample is added to a pyridine-methanol solution", the rest of the sentence explaining the chemistry of the titration.

b) Considering that the Karl Fischer titration method is intended to be used to determine the amount of moisture that evolves from a coated filler during the production of a thermoplastic film, which requires that the sample to be tested is heated at 195 °C (see above), it is obvious for the skilled reader that Karl Fischer titration cannot be performed at room temperature directly on the coated particles before the heating step necessary to have moisture evolving from the coated particles has been carried out.

c) Moreover, regarding the issue of the temperature, it was indicated by the patent proprietor, in particular during the oral proceedings before the Board, that the method indicated in paragraphs 55-57 of the patent in suit, which comprises placing a sample in a pyridine-methanol solution obviously cannot be performed at 195 °C in view of the use of those organic solvents. The Board is convinced, as explained by the patent proprietor, that the skilled person considering the goal of the measurement, i.e. determining the amount of water evolving at 195 °C from the coated particles and the principle and chemistry of the well known Karl Fischer titration as briefly explained in paragraph 55 of the patent in suit, would understand that the water vapour evolving from the heated coated particles would have to be transferred as a "sample" (using the wording of paragraph 55 of the patent in suit) to the measuring Karl Fischer unit, for example by known means such as a nitrogen stream. Furthermore, no evidence has been submitted by the opponents to refute that argument put forward by the patent proprietor both during the oral proceedings before the Board and during the opposition proceedings (see minutes of the oral proceedings before the opposition division: page 2, end of the second paragraph). Consequently, the opponents have not discharged their burden of proof that the skilled person would not be in a position to determine the "total surface moisture level" according to step (a) of claim 1 on the basis of the information provided in the patent specification in respect of the Karl Fischer titration method in combination with the skilled person's common general knowledge.

2.2.4 Although the opponents argued that different ways of performing a Karl Fischer titration could be

contemplated, they neither showed that such methods would lead to significantly different results in terms of "total surface moisture level" nor why that alleged ambiguity would amount to a lack of sufficiency of disclosure. Under such circumstances, said objection can at most be related to an alleged lack of clarity pursuant to Article 84 EPC, which is not a ground of opposition and which may not be raised at the present stage of the proceedings (appeal on an opposition) since that parameter is present in the granted claims (G 3/14).

2.2.5 Should water of crystallisation be present in the filler, as argued by the opponents, there is no evidence on file that it would not be taken into account after heating the sample and measurement by a Karl Fischer titration method as taught in the patent in suit. Therefore, that argument did not convince.

2.2.6 For those reasons, the opponents' objections regarding a lack of sufficient disclosure related to the term "total surface moisture level" in claim 1 is rejected.

2.3 Alleged lack of technical guidance

2.3.1 The opponents argued that the patent in suit did not provide sufficient technical guidance in order reliably to carry out the method according to claim 1.

2.3.2 However, information in respect of the working conditions to be used in the methods claimed e.g. drying temperature, time period, humidity to prepare the required reduced moisture level is provided in paragraphs 33-52 of the patent in suit.

2.3.3 In paragraphs 37-38 of the patent in suit it is in particular indicated that when a wet grinding process is employed to produce the filler of the invention, the amount of hydrophilic dispersant should be controlled.

2.3.4 It is further explained in paragraphs 40-46 of the patent in suit that the filler may be dried in one or two heating steps, whereby the first heating step may be by direct or indirect heating means while the second heating step may suitably carried out by indirect heating means (end of paragraph 40). As may be derived from paragraph 45, direct heating systems can add to the moisture content of the filler and is, therefore, less preferred.

2.3.5 The teaching of the description in respect of the amount of hydrophilic dispersant and direct/indirect heating is further confirmed by example 1 of the patent in suit. In that example, 11 samples of stearic acid coated calcium carbonate were prepared under various conditions. Sample 5, which is the sole example having an amount of adsorbed water according to claim 1 (Table 2) was wet ground with zero residual dispersant, flash dried and indirectly heated and coated (Table 1). All other samples, which were either carried out with an amount of hydrophilic dispersant not according to the preferred teaching of the patent in suit (samples 1-4, 6-8 and 11; paragraph 38; Tables 1-2) and/or with direct heating (samples 6-10; Table 1), did not exhibit an amount of adsorbed water according to claim 1 (Table 2). In paragraphs 91 and 93 of the patent in suit it is further explicitly concluded that those results show that there is a good correlation between reducing both the dispersant level and surface moisture level.

2.3.6 In view of the above, it is concluded that the patent in suit provides sufficient guidance regarding the method to be used to prepare reliably a coated filler having a "total surface moisture level" of not greater than 0.1 % by weight as indicated in claim 1, in particular regarding the fact that it may be important to control both the amount of residual hydrophilic dispersant and the manner of heating the filler in step (a) of the method defined in claim 1.

2.3.7 For those reasons, the opponents' objections regarding a lack of technical guidance is rejected.

2.4 Hydrophobic coating

2.4.1 The opponents argued that the patent in suit was insufficiently disclosed because it did not define when a coating was "hydrophobic".

2.4.2 However, it is specified in claim 1 that the coating is produced "by reaction with a hydrophobising surface treatment agent comprising one or more aliphatic carboxylic acids having at least 10 chain carbon atoms" and it is indicated in paragraphs 31-32 of the patent in suit that such a surface treatment is known in the art, which was not contested by the opponents. Further information in that respect, in particular regarding the treatment method and the nature of the hydrophobic agents, is also provided in paragraphs 31-32 and 47-48 of the patent in suit.

2.4.3 Hydrophobicity is known in the art as being the property of a material to repel or fail to mix with water (in opposition to hydrophilicity). This is also the meaning in the patent in suit as can be derived e.g. from paragraph 48. In that respect, it is noted

that it is also opponent 1's understanding of that term, as is derivable from the conclusion drawn in D24 (last two sentences on page 3) according to which a coating was not "hydrophobic" because it was completely wetted by water droplets. In view of the above, the opponents' objection can only be related to the question if the skilled person knows when a coating is or is not "hydrophobic", i.e. if he is working within or outside the scope of the claims, which is, in the present circumstances of the case, at most an issue of clarity pursuant to Article 84 EPC but not of sufficiency of disclosure.

2.4.4 The question whether or not sufficient hydrophobicity is necessary "for the purpose of the invention", as argued by the opponents, is at most related to the question of which technical problem can be considered to be solved over the whole scope of the claims, e.g. also for small amounts of treatment agent, which is an issue of inventive step pursuant to Article 56 EPC, not of sufficiency in the sense of Article 83 EPC.

2.5 Under those circumstance, the objections of lack of sufficient disclosure submitted by the opponents against claim 1 of the main request did not succeed.

2.6 In view of the conclusion drawn in section 2.2.3.a above, the Board is further satisfied that also claim 18 of the main request is sufficiently disclosed.

3. Novelty

3.1 The opponents objected that the subject-matter of operative claim 1 was not novel over example 1 of D17, as well as over D3 and D1.

3.2 Example 1 of D17, respectively of WO 98/02610

3.2.1 D17 is a Canadian patent application published in 2006 and is not a valid prior art pursuant to Article 54 EPC. However, as can be seen from the third page of D17, that Canadian application is a copy of international application WO 98/02610, which was published on 22 January 1998 and which is a valid prior art according to Article 54(2) EPC. Therefore, the following analysis, although it is based on D17, would be valid when referring to WO 98/02610. That conclusion was adhered to by the patent proprietor during the oral proceedings before the Board.

3.2.2 Example 1 of D17 deals with the preparation of a breathable film made from a thermoplastic composition of two polyethylenes comprising as filler "English China Supercoat^{TM} calcium carbonate ($CaCO_3$) coated with 1% stearic acid and obtained from ECCA Calcium Products, Inc. in Sylacauga, Alabama, a division of ECC International" (D17: page 25, lines 11-15).

3.2.3 The sole issue in dispute between the parties was whether or not the specific calcium carbonate disclosed in example 1 of D17, namely Supercoat, exhibits a total surface moisture level of not greater than 0.1 % by weight as specified in operative claim 1.

3.2.4 In that respect, it was agreed by the parties that D17 makes no reference to that parameter.

3.2.5 It was not contested by the patent proprietor that D18, which bears no publication date, was a valid prior under Article 54(2) EPC, as may be derived from D18A (published in 1993 and which contains further passages

of the same book as D18).

3.2.6 D18 contains information about the product Supercoat Calcium Carbonate of ECC America Inc.. It is in particular indicated therein that Supercoat is a coated material and two tables entitled "Typical Physical Characteristics" and "Typical Chemical Analysis" are given. The following indication is in particular given in the Table "Typical Chemical Analysis": "Moisture: 0.1 max.". The issue in dispute between the parties was whether said moisture level is related to the coated or the uncoated filler.

a) In that respect, it is noted that the Table "Typical Chemical Analysis" of D18 makes no reference at all to stearic acid, which is however, according to D17, used as surface treatment agent in an amount of 1 wt.%. It is also noted that all components listed in said Table add up to make 99.6 wt.%. It does not appear plausible that a typical chemical analysis, given with a precision of up to two decimals for certain components, would not mention a component present in an amount of 1 wt.%.

b) The opponents' argument according to which it is usual to eliminate the coating before doing the chemical analysis of a filler is not supported by any evidence and cannot be retained by the Board. Nor does it appear convincing that a chemical analysis made after elimination of said coating could indicate the water content of the coated filler as it is unknown whether the step of removing the coating would remove or add any water to the uncoated filler.

c) In view of the above, it cannot be concluded in the light of D18 alone that the moisture level mentioned in

D18 mandatorily refers to the coated filler.

3.2.7 The opponents' argumentation was further based on D31, the admission into the proceedings of which was contested by the patent proprietor.

a) D31 was filed with opponent 2's rejoinder to the statement of grounds of appeal, i.e. pursuant to Article 12(2) RPBA. It was further filed in support of opponent 2's argumentation in respect of novelty and in reply to the arguments put forward in the patent proprietor's statement of grounds of appeal. Under such circumstances, there is no reason for the Board not to admit D31 to the proceedings pursuant to Article 12(4) RPBA.

b) D31 is a telefax from the company VIE Americas, Inc. to opponent 2 comprising a specification for a material "calcium carbonate Supercoat". Said specification comprises among others two tables entitled "Typical Physical Characteristics" and "Typical Chemical Analysis", both of which contain exactly the same data as those listed in the corresponding tables of D18. However, in D31, several data listed in the Table "Typical Physical Characteristics" are explicitly indicated (with a "*") to refer to the properties before surface treatment, i.e. to the properties of the uncoated material, indicating that some of the properties indicated in D31 are not necessarily those of the coated material. Considering that the values of the typical physical characteristics and the typical chemical analysis indicated in D18 and D31 are identical, it cannot be concluded in view of the indication in D31 that some of the values refer to the uncoated filler that the values provided in D18 refer to the contrary to those of the coated filler.

c) The fact that for another filler, namely Kotamite, it is explicitly indicated elsewhere in the same book (D18A: page 154) that the pH of the slurry is that for uncoated material is not sufficient to provide an unambiguous indication that the other data should be considered to be those of the coated filler, and therefore that it would be the case for the coated filler disclosed in either D18 or D31.

d) The fact that telefax D31 contains a mention indicating that the datasheet contained therein is a product specification of Supercoat which is known to be a coated filler is, in the Board's view, also not sufficient to remove the doubts arising from the direct comparison of the properties of Supercoat contained in D18 and D31.

e) In view of the above, the comparison of D18 and D31, even when taking D18A into account, does not allow to conclude that the moisture level mentioned in D18 mandatorily refers to the coated filler.

3.2.8 During the oral proceedings before the Board, opponent 1 drew the attention of the Board to the fact that ECC America Inc., which is the company indicated in D18 in reference to Supercoat, is in fact opponent 1's former company name and that opponent 1 confirmed that the chemical analysis given in D18 was that of the coated material.

However, that statement is not supported by any corroborating evidence and is, thus, insufficient to convince the Board.

3.2.9 In view of the above and considering the information contained in D18, D18A and D31, it cannot be concluded that the moisture content disclosed in either D18 or D31 is related to the coated filler. Under such circumstances, it was not shown that the filler Supercoat used in example 1 mandatorily has a moisture content of "not greater than 0.1 wt.%" according to operative claim 1.

3.2.10 Whereas the patent proprietor requested that D23, which had not been admitted to the proceedings by the opposition division, be admitted to the proceedings by the Board, opponent 2 specifically requested during the oral proceedings before the Board that D23 should not be admitted to the proceedings. However, considering that it was neither shown nor argued by the opponents that D23 contained any information that would refute the conclusion drawn above in the light of D18, D18A and D31, D23 is not relevant for the present decision and was not admitted into the proceedings by the Board (Article 12(4) RPBA).

3.3 Document D3

3.3.1 D3 discloses films comprising a microporous core layer containing at least a thermoplastic polymer and a particulate filler (claim 1, layer B).

3.3.2 The particulate fillers which may suitably be used to make the micropores are listed from page 12, line 11 to page 13, line 10, of which calcium carbonate is indicated as the preferred material (last sentence of the above passage). No mention is made in that section of coated particulate fillers.

3.3.3 The formation of micropores is explained on pages 18-19 of D3, in which it is taught that the amount of water and/or volatiles in the material to be processed should be reduced in order to avoid foaming or large holes in the films (page 18, lines 25-29). Regarding water, it is further mentioned that it is known that the thermoplastic resins used for making the films are usually hydrophobic and do not release water upon processing but that this is not the case for hydrophilic particulate fillers such as calcium carbonate (page 18, line 31 to page 19, line 3). Regarding volatiles, it is further indicated that a known source is the coating typically present on particulate filler such as stearic acid which is typically used to coat calcium carbonate (page 19, lines 8-11). In that case, D3 discloses that the amount of volatiles released from the coating may be controlled by degassing the mineral during compounding. Such a methodology is indeed known in the art as indicated in paragraph 10 of the patent in suit. However, such a method is a post-treatment of the coated filler during the film production and does not correspond to the sequence of process steps (a) and (b) according to operative claim 1, which define that the inorganic filler is first coated under conditions such as to achieve a moisture level of not greater than 0.1 wt.% and subsequently mixed to the thermoplastic polymer.

3.3.4 On page 19, lines 17-22 and 25-34 of D3 it is further explained that the amount of water and/or volatiles in the starting materials should be sufficiently low to prevent the formation of large holes and that it should suitably be between 100 ppm and 500 ppm. However, said passage is not specifically directed to coated fillers, in particular not to the calcium carbonate coated with

stearic acid mentioned earlier at page 19, lines 8-16 of D3. In that respect it is noted that the fillers listed in D3 (see section 3.3.2 above) and used in the examples of D3 (page 23, line 5) are not specifically surface coated. Besides, the indication "a suitable total volatile content for the particulate filler has been found to be between about 100 ppm and about 500 ppm" (page 19, lines 30-33), although it may be held as indicating a preferred embodiment of D3, it does not constitute a mandatory feature which must apply to all embodiments of D3. In particular, it cannot be concluded that the teaching of D3 in its whole imposes a maximum amount of 500 ppm volatiles and/or water for any embodiment illustrative of the invention of D3. Therefore, it cannot be concluded that D3 directly and unambiguously discloses the combination of said range of 100-500 ppm water and/or volatiles for the calcium carbonate surface coated with stearic acid disclosed on page 19, lines 8-16 of D3.

3.3.5 For those reasons, D3 fails to disclose directly and unambiguously the combination of features according to steps (a) and (b) of the method according to operative claim 1.

3.4 Document D1

3.4.1 a) D1 is an "E" document (priority older than the priorities of the patent in suit but published after the international filing date). Therefore, D1 can only be taken into account for novelty if the novelty destroying subject-matter is supported by the priority document of D1. In the present case, the sole subject-matter susceptible to be novelty destroying consists in the examples in which a film is made. However, said subject-matter is not supported by the priority of D1.

D1 may not anticipate the subject-matter being claimed.

3.4.2 Besides, it was not shown by the opponents that D1 explicitly discloses the "total surface moisture level" feature according to operative claim 1. Nor was it indicated which subject-matter of D1 was held to disclose directly and unambiguously the specific combination of features according to operative claim 1 (at least 10 carbon atoms; thermoplastic polymer; breathable film).

3.4.3 Those conclusions, which were already drawn in the Board's communication, were not contested by the opponents, in particular not during the oral proceedings before the Board.

3.5 In view of the above, the opponents' novelty objections in respect of each of D17, D3 and D1 are rejected.

4. Remittal

The issue of inventive step was not addressed in the contested decision. Further considering that all parties requested remittal to the first instance, it is appropriate to remit the case to the department of first instance for further prosecution (Article 111(1) EPC).

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 for further prosecution on the basis of the main request, which corresponds to auxiliary request 2 filed with letter dated 9 August 2016.

The Registrar: The Chairman:

B. ter Heijden F. Rousseau

Decision electronically authenticated