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**Datasheet for the decision
of 16 September 2009**

Case Number: T 1693/06 - 3.3.06

Application Number: 97916404.3

Publication Number: 0891417

IPC: C11D 3/39

Language of the proceedings: EN

Title of invention:

Compositions containing sodium percarbonate

Patentee:

SOLVAY INTEROX (Société Anonyme)

Opponents:

Kemira Kemi AB
The Procter & Gamble Company
Degussa AG

Headword:

PCS compositions/SOLVAY

Relevant legal provisions:

-

Relevant legal provisions (EPC 1973):

EPC Art. 54, 56

Keyword:

"Novelty - (main request and auxiliary requests 1, 3 to 5, 7 and 8): no"

"Inventive step (auxiliary request 6): no - obvious modification"

Decisions cited:

T 0895/04

Catchword:

-



Case Number: T 1693/06 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 16 September 2009

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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 14 September 2006 revoking European patent No. 0891417 pursuant to Article 102(1) EPC 1973.**

Composition of the Board:

Chairman: L. Li Voti
Members: P. Ammendola
 J. Geschwind

Summary of Facts and Submissions

- I. This appeal is from the decision of the Opposition Division to revoke the European patent No. 0 891 417 concerning sodium percarbonate (hereinafter PCS) for detergent compositions.
- II. Claims 1 and 4 of the patent as granted read:
- "1. Sodium percarbonate intended for incorporation in a builder-containing detergent composition and having a mean particle size of from 500 to 1000 μm **characterised in that** the core material of the sodium percarbonate which has not been subjected to a coating or a surface treatment has not more than 20% by weight of below 350 μm and has a moisture pick-up when measured in a test at 80% relative humidity and 32°C after 24 hours of not greater than 30g/1000g sample."
- "4. A sodium percarbonate according to any preceding claim **characterised in that** sodium percarbonate having such intrinsic particle size and moisture pick-up characteristics has been coated with a layer of from 1 to 20% and preferably 2 to 5% by weight of an inorganic and/or organic coating."
- III. Opponents I to III had sought revocation of the patent in suit on the grounds of insufficient disclosure (Article 100(b) EPC 1973) and of lack of novelty and inventive step (Article 100(a) in combination with Articles 52(1), 54 and 56 EPC 1973).

The Opposition Division had initially found that the patented invention was insufficiently disclosed and had revoked the patent.

The Patent Proprietor had appealed this decision and this Board had decided in T 895/04 that the invention was sufficiently disclosed. The case was thus remitted to the department of First Instance for further prosecution.

IV. In the subsequent proceedings before the Opposition Division the parties discussed novelty and inventive step by relying, *inter alia*, on documents

(7) = CA-A-2158798 (referred to in the patent-in-suit as its equivalent EP-A-703190)

and

(19) = WO 95/02555.

V. The Opposition Division revoked the patent because

- the uncoated PCS of example 4 in document (7) anticipated the subject-matter of claim 1 as granted as well as that of claim 1 of the then pending auxiliary request 1,
- the PCS coated with a layer of from 1 to 20% by weight as claimed in the then pending auxiliary requests 2 to 7 was already disclosed in the examples B8 and B9 of document (19), and

- the PCS coated with a layer of from 1 to 5% by weight as claimed in the then pending auxiliary request 8 amounted to an arbitrary selection within the prior art already disclosed in document (19) and, thus, was not based on an inventive step.

In particular the Opposition Division considered that the uncoated particles of example 4 of document (7) were made by using the same process that was described in the patent-in-suit for preparing PCS with the claimed combination of properties. Thus, no experimental proof was necessary for concluding that the PCS particles of this example 4 also possessed

- a) a moisture pick-up of less than 30g/1000g and
- b) an amount of not more than 20% by weight of fine particles having a size smaller than 350 μm (hereinafter these two requirements of claim 1 as granted are respectively referred to as the MPU requirement and the 20%-fines requirement).

The Opposition Division also considered that the initial MPU of the starting uncoated PCS particles would not represent a distinctive feature for the coated PCSs obtained from such starting particles, because of the modification of the MPU of the PCS particles during the coating step possibly caused by the aqueous medium.

- VI. The Patent Proprietor (hereinafter Appellant) lodged an appeal against this decision and filed with the letter setting out the grounds of appeal a declaration by Claude Criado containing an experimental report (hereinafter ER1) and four sets of amended claims

respectively labelled as auxiliary requests 1 to 4. New experimental data labelled as "Essai" 1 and 2 (hereinafter ER2) were also reported in the letter itself.

Opponents I to III (hereinafter Respondents I to III) replied in writing to the grounds of appeal. An experimental report by Stefan Leininger (hereinafter ER3) was enclosed with the reply of Respondent III.

The Appellant filed with a Facsimile of 17 August 2009 further four sets of amended claims respectively labelled as auxiliary requests 5 to 8.

During the oral proceedings that took place before the Board on 16 September 2009, the Appellant **withdrew the previously filed auxiliary request 2.**

VII. For the present decision it is sufficient to consider the above-reported claims 1 and 4 of the patent-in-suit as granted (**main request**) and the following claims of the Appellant's auxiliary requests:

claim 19 of the **auxiliary request 1**, which differs from claim 1 as granted only in that the wording "*the core material of the sodium percarbonate which has not been subjected*" has been replaced by "*the sodium percarbonate is not subjected*";

claim 1 of the **auxiliary request 3**, which is identical to claim 19 of the auxiliary request 1;

claim 1 of the **auxiliary request 4**, which differs from claim 1 as granted only in that the wording "*of not*

greater than 30g/1000g" has been replaced by *"of up to 15g/1000g"*;

claim 18 of the **auxiliary request 5**, which is identical to claim 19 of the auxiliary request 1, except for the additional presence of a comma between the words *"treatment"* and *"has"*;

claim 1 of the **auxiliary request 6**, which differs from claim 1 as granted only due to the additional presence at the end of the claim of the wording *", and in that sodium percarbonate having such intrinsic particle size and moisture pick-up characteristics has been coated with a layer of from 1 to 5% by weight of an inorganic and/or organic coating"*;

claim 1 of the **auxiliary request 7**, which is identical to claim 19 of the auxiliary request 1;

and

claim 1 of the **auxiliary request 8**, which differs from claim 1 of the auxiliary request 4 only because the wording *"of up to 15g/1000g"* has been replaced by *"of not more than 15g/1000g"*.

VIII. The following arguments have been presented by the Appellant during the discussion on novelty of the **main request** and of the **auxiliary requests 1, 3 to 5, 7 and 8**.

The PCS of example 4 of document (7) would not anticipate the patented uncoated particles firstly because the data of ER1 would prove that the disclosure

of this example could not be carried out. The Appellant stated that this was due to a transcription error which occurred when drafting the patent application of document (7) and that was, thus, unrecognisable from document (7) *per se*.

Secondly, the Respondents' allegations that example 4 fulfilled the MPU and 20%-fines requirements as well, were neither supported by experimental evidence nor derivable from the disclosure of the patent-in-suit. As a matter of fact, this latter only described that PCSs with the desired combination of properties could possibly - but not necessarily - be obtained by using the apparatus of document (7) and that it was nevertheless necessary to control the process conditions in order to actually obtain PCSs with such properties. Moreover, several differences existed between the process for preparing the PCS described e.g. in examples 1 to 3 of the patent-in-suit and the process used in example 4 of document (7).

The Appellant did not dispute that the MPU of the core of the coated PCSs of the invention could be different from that of the starting PCSs from which the former ones are obtained, but submitted that the MPU of the starting PCSs was correlated to a number of structural characteristics of the PCS particles favourable to the stability of these latter, such as a certain porosity, a certain regularity and/or the absence of hygroscopic ingredients like e.g. NaCl. These structural characteristics were intrinsic, in the sense that they were unaffected by the subsequent interaction of the particles e.g. with atmospheric moisture or water, and, thus, they were also retained in the coated final PCSs

and contributed to the superior stability of these latter, as proved by the invention examples and by ER2.

The interpretation of the MPU requirement made by the Respondents, an interpretation also reflected in the experiments reported in ER3 by Respondent III, would instead be senseless for the skilled reader of the patent-in-suit, already because MPU measured without an appropriate preconditioning of the PCS samples would not allow univocally to identify which PCSs possess the structural characteristics favouring the particles stability. Hence, it would be evident that the MPU was to be measured as in the examples of the patent-in-suit i.e. after having dried the PCSs with hot air. Such treatment could only reasonably consist in removing moisture from the sample until the sample's weight became constant. The specific conditions of this drying step were also apparent to the skilled person who would avoid those temperature and time conditions at which appreciable decomposition of the percarbonate would take place. Moreover, also the patent examples would allow identification of the correct drying conditions.

In respect of the inventive step assessment for the coated PCSs to which claim 1 of the **auxiliary request 6** was limited, the Appellant submitted that document (19) in general, and not specifically examples B8 and B9 therein, represented the most relevant prior art. This document expressly stressed the importance of using an amount of coating layer sufficient for completely surrounding with constant thickness the PCS core. Therefore, it was not possibly obvious to use an amount of coating layer equal to or lower than 5% by weight, because one would expect that such reduced coating

amounts appreciably lowered the stability of the coated particles. Hence, the subject-matter of claim 1 of this request would at least represent a non-obvious solution to the problem of retaining the advantages in terms of stability of the coated PCSs of the prior art, while simultaneously maximizing their active oxygen content.

IX. The Respondents refuted these arguments presenting, *inter alia*, the following observations.

The Appellant had submitted ER1, as well as the auxiliary requests 5 to 8, unjustifiably late and, thus, none of these should be admitted into the proceedings.

Moreover, the vague statement in ER1 as to the impossibility of reproducing example 4 of document (7) would be deprived of the details necessary to render such statement credible and/or verifiable and, in any case, would not be based on any reliable experimental reproduction of such example due, *inter alia*, to the difference in size of the crystallizer/classifier used while maintaining the same rotational speed of the agitator used in such crystallizer. Similarly deprived of credibility and/or completeness were the statements in the same ER1 as to the origin of the error allegedly contained in example 4 of document (7).

The Respondents relied on the arguments given by the Opposition Division as to the predictability of the fines content and of the MPU of the uncoated PCS obtained in example 4 of document (7) and reaffirmed that the claimed uncoated PCSs were not novel.

As to the coated PCSs claimed, the Respondents stressed that no specific preconditioning of the samples mandatorily preceding the actual MPU measurement was mentioned in the claims or disclosed in the specifications of the patent-in-suit. The simple mention that this property was measured on a "dry" PCS sample only implied, as already established in T 895/04, the absence of a level of moisture rendering impossible the actual MPU measurement described in paragraph [0026] of the patent-in-suit. Hence, and contrary to the Appellants' allegations, it neither necessarily implied that this drying step was to be made with hot air, nor that it was to be continued until achieving constant weight of the sample. But even in the hypothetical case that the skilled person would have considered this possibility, the drying conditions to be selected would remain obscure since the high temperatures and/or prolonged drying time required for obtaining the removal of moisture would also inevitably promote decomposition of the PCS.

Also because of this reason, no correlation existed between the MPU and the stability of the coated PCS. Indeed, the data in ER3 showed that two samples made in identical manner might have different MPU values solely as a result of having been subjected to different drying conditions. Hence there was no benefit in using coated particles complying with the MPU requirements.

The experimental comparison of ER2, similarly to those reported in the patent-in-suit, represented no credible evidence to the contrary since all of them were no single variable comparisons.

Therefore, the MPU requirement had no limiting effect on the claims directed to coated PCSs and these latter lacked novelty in view of examples B8 or B9 of document (19).

As to the coated particles of claim 1 of the auxiliary request 6, they were also not novel, but even if the Board would acknowledge their novelty over the PCSs of examples B8 and B9 of document (19) because of the lower amount of coating in the claimed PCSs, this difference would not result in an inventive step since no unexpected stability benefits had ever been alleged in the patent-in-suit to derive from such feature. The sole credible advantage resulting from it would be self-evident as well as predictable from document (19) itself: i.e. that of reducing the amount of ingredients not containing active oxygen. Thus the technical problem to be solved was only to provide an alternative coated particle. To solve such a technical problem the Appellant had simply selected an arbitrary reduction of the amount of the coating layer predictably beneficial to the concentration of active oxygen.

- X. The Appellant requested that the decision of the first instance be set aside and that the patent be maintained as granted or, alternatively, on the basis of the sets of claims according to the auxiliary requests 1, 3 or 4 filed with the grounds of appeal or according to any of auxiliary requests 5 to 8 filed with the Facsimile of 17 August 2009.

The Respondents requested that the appeal be dismissed.

Reasons for the decision

Main request

1. Novelty of claim 1 as granted (Article 100(a) in combination with Articles 52(1) and 54 EPC 1973)

This claim describes a PCS intended for incorporation in a builder-containing detergent composition characterised in having a mean particle size of from 500 to 1000 μm and in that its core material fulfils both the MPU and the 20%-fines requirements (see above section II of the Facts and Submissions).

Already from the wording "*core material*" and from that of claim 4 as granted (see above section II of the Facts and Submissions) it is apparent that claim 1 embraces both **uncoated** and **coated** PCS particulates. This is also consistent with the whole disclosure of the patent-in-suit.

The novelty of the patented uncoated PCS has been denied by the Opposition Division on the basis of example 4 of document (7). That of the patented coated PCS on the basis of examples B8 and B9 of document (19).

- 1.1 Novelty of the **uncoated** PCS

The Board notes that the uncoated PCS obtained in example 4 of document (7) - which is an older patent of the Appellant - has been produced by using an integral crystallizer/classifier in the presence of sodium sulphate as salting-out agent, and that such PCS

possesses an average particle size of 780 μm and a particle size span of 0.7 (see document (7) pages 14 to 16).

- 1.1.1 The Appellant has objected to the relevance of this disclosure arguing that example 4 in document (7) could not be reproduced. In its opinion the experimental report ER1 proved that repetitions of the teaching in example 4 of document (7) would only lead to PCS crystals of extremely small size and, thus, to the formation of a gel. Furthermore, the experimental data contained in ER1 allegedly replicating the original experiment that had actually been carried out by the Appellant at the time of the filing of the original application of document (7), would be consistent with the Appellant's finding that the lack of reproducibility of example 4 was due to an error which occurred while transcribing into such application the experimental conditions actually used in the Appellant's laboratory, which error was, thus, not discernible from the content of document (7) alone.
- 1.1.2 The Board remarks that the experiments referred to in ER1 have been carried out by the Appellant in an integral crystallizer/classifier reactor admittedly smaller than that used in the prior art example whilst maintaining the same rotational agitation speed. The Board considers that already such difference in the reactor size could have appreciable bearings on the conditions of crystallization and consequently on the dimensions of the obtained PCS crystals. This would explain the substantial differences between the results reported in ER1 and that of example 4 of document (7).

Moreover, the Appellant has provided no evidence that the published description of example 4 of document (7) resulted from an error in the transcription of the experiment actually carried out by the Appellant.

Accordingly, the experiments in ER1 cannot possibly contain any conclusive technical information as to the alleged lack of reproducibility of example 4 of document (7).

Therefore, ER1 is found to be manifestly inconclusive and is, thus, to be disregarded.

In view of that, the inadmissibility of ER1 argued by the Respondents does not need to be discussed.

Hence, the Board can only conclude that example 4 of document (7) may be reproduced and, thus, is part of the prior art relevant for the assessment of novelty in the present case.

- 1.1.3 The other argument of the Appellant against the relevance of example 4 of document (7) is that, contrary to the reasoning of the Opposition Division, the disclosure provided by the patent-in-suit would not justify the assumption that the PCS of example 4 of document (7) should necessarily comply with the 20%-fines and MPU requirements of claim 1.

The Appellant has conceded that if the PCS of example 4 would possess an about "normal" particle size distribution, it would, even in the absence of any further classifying step, necessarily comply with the 20%-fines requirement of granted claim 1. However, in

the Appellant's opinion, the specifications of the patent-in-suit would **not necessarily** imply that the use of the apparatus of document (7) and of sodium sulphate **inevitably** results in a "normal" particle size distribution or in MPU of not more than 30g/1000g.

Indeed, the use of the apparatus of document (7) in combination with sodium sulphate as salting-out agent is not the sole method mentioned in the patent-in-suit for producing the PCSs of the invention.

Moreover, example 4 of document (7) was carried out under conditions that differ from those used in the examples of the patent-in-suit.

Finally, the patent-in-suit expressly acknowledged, e.g. in paragraph [0087], that the desired properties of the PCSs were obtainable only under certain specific "operating conditions" of the integral crystallizer/classifier.

- 1.1.4 The Board notes that the disclosure in the patent-in-suit relevant in view of this argument starts at paragraph [0016], disclosing that *"A product having a mean particle size of at least 600 μm and especially at least 650 μm and a span of from 0.9 to 1.2 will often meet the particle size criteria without further classifying being carried out"*. Paragraph [0020] then suggests expressly the use of the integral crystallizer/ classifier and states that *"The product usually has a particle distribution which is similar to "normal", the spread of which depends on the type of plant employed. It often has a span of from about 0.6 to about 0.9"*. Thereafter, paragraph [0029] indicates

that "It has been found that the extent of moisture pick-up is influenced by which substances, such as salting-out agents, are employed to promote crystallisation of the percarbonate. ... In certain particularly preferred processes for obtaining sodium percarbonate having the desired low moisture pick-up characteristics, sodium sulphate is employed as salting-out agent." and paragraph [0032] that "One type of apparatus, which can advantageously be employed to produce sodium percarbonate having intrinsically acceptable properties, provided that an appropriate choice is made of salting-out agent, if any is used, is described in EP-A-703190 to Solvay Interlox SA."

Despite the presence in these passages of terms such as "often" or "usually", it remains **an undisputed fact** that the crystallization process described in example 4 of document (7) - in which sodium sulphate is used as salting-out agent in an integral crystallizer/classifier operated under the conditions required for obtaining PCS with an average particle size of 750 µm and a span of 0.7 - corresponds to a combination of the process features that is **expressly acknowledged** in the above-cited passages of the patent-in-suit as **particularly preferred** for producing PCSs with all the required properties.

The relevance of this fact is unaffected by the Appellant's considerations that the patent-in-suit discloses also other possibilities for obtaining PCSs of the invention (e.g. by completely omitting the salting-out agent) and/or that some of the reported experimental conditions of example 4 of document (7)

are different from those used in the examples in the patent-in-suit.

Furthermore, the disclosure actually provided in paragraphs [0061] and [0087] of the patent-in-suit is only that the control of the "*operating conditions*" of the method of document (7) allows obtainment of different **embodiments of the invention**, i.e. it only discloses that it is possible to produce further PCSs **fulfilling** the 20%-fines and MPU requirements, by tuning the "*operating conditions*".

The Board, thus, is convinced that the prior art method used in example 4 of document (7) corresponds with one of the most preferred methods disclosed in the patent-in-suit for obtaining PCSs with the desired properties.

1.1.5 The Board notes additionally that the predictability of a "normal" particle size distribution in the product of this prior art is further supported by the convincing Respondents' observations that:

- since the above cited passage in paragraph [0020] of the patent-in-suit indicates that an integral crystallizer/classifier used as described in document (7) would usually produce a "normal" distribution, the same apparatus would only produce a "non-normal" particle size distribution under very **unconventional** "*operating conditions*";
- moreover, the very fact that document (7) indicates a particle size span for the PCS particles of example 4, logically implies that the particle size distribution in such particles is

"normal", because it only makes technical sense to measure the span parameter for particulates with "normal" particle size distribution.

- 1.1.6 As to the compliance of the PCS of example 4 of document (7) with the MPU requirement, the Board finds that the method for its testing disclosed in the patent-in-suit (paragraphs [0025] to [0028]) is so undetermined to render reasonably certain that the MPU requirement of claim 1 is satisfied by any PCS particulate that is prepared according to the methods described in the patent-in-suit.

This finding is based on the following reasons.

The lack of precision of the description of the patent-in-suit as to the MPU test has already been identified in the previous decision T 895/04, point 1.4, where the Board had concluded that the term "*dry percarbonate*" in paragraph [0026] only indicates that the sample had been dried up to an unspecified degree of humidity within the particles. The only necessary implication of such term, was that the sample had to be dry enough to permit carrying out the MPU measurement.

The Appellant has disputed this interpretation, because a MPU testing method without a precise preconditioning of the sample humidity would be senseless for the skilled reader of the patent-in-suit. According to the patent specifications, e.g. in paragraphs [0015] or [0029], the **essential function** of the MPU parameter is that of corresponding to a number of intrinsic structural properties of the particles - such as their porosity or regularity, or the absence therein of

sodium chloride - that are important in view of the stability of the PCS. Hence, in the Appellant's opinion, the skilled person would rather interpret the expression "*dry sodium percarbonate*" as present in paragraph [0026] as an implicit but clear instruction to remove **any removable moisture** from the sample before the MPU measurement. The skilled person would find further support in this interpretation e.g. at the last line of paragraph [0061] describing the patent examples 1 to 3 and ending with "*The product was dried by hot hair*". Thus, in the opinion of the Appellant, the sole technically sound interpretation of the MPU requirement in the patent-in-suit would be that such value is to be measured on a sample previously dried **by hot air** under conditions that allow the achievement of **constant weight** of the sample. It would also be evident to the skilled person that such conditions cannot possibly be **those promoting substantial decomposition of the PCS**.

The Board notes that the Appellant's interpretation of the disclosure in the patent-in-suit of the MPU test implies:

(a) that the skilled reader would interpret the last line of paragraph [0061] reading "*The product was dried by hot hair*" as related to the expression "*dry sodium percarbonate*" as present in paragraph [0026],

(b) the existence of common general knowledge according to which it would be immediately apparent to the reader of the sentence "*The product was dried by hot hair*" that the drying conditions were those required for **achieving constant weight of the sample**,

and

(c) the existence of further common general knowledge indicating that it was feasible, and how, to remove all moisture with hot air **without simultaneously decomposing the PCS.**

The Board notes, however, that paragraph [0061] does not mention MPU at all or its measurement. Moreover, the alleged common general knowledge, whose existence has been disputed by the Respondents, is unsupported by any evidence and, at least in part, hardly credible. Indeed, as acknowledged by the Appellant, high temperatures and/or prolonged drying time, i.e. the measures normally required for obtaining removal of moisture until constant weight is obtained, would also inevitably promote decomposition of the PCS. Hence, even if one would assume for the sake of an argument in favour of the Appellant, that the skilled person would consider the possibility of drying the sample so as to achieve constant weight, it would still not be evident if and how it is possible to achieve the aimed complete moisture removal and at the same time avoid appreciable decomposition of the PCS.

In view of these considerations, the Board remains of the opinion that the sole reasonable meaning of the MPU parameter remains that already given in the previous decision of the Board, according to which the MPU measurement only requires the sample to be dry enough for actually carrying out the measurement.

Hence, and since each PCS may indisputably display variable levels of dryness which would inevitably influence its capacity for picking up moisture, the disclosure of the MPU test in the patent in suit is so undetermined that the sole clear characterising function expressed by the MPU requirement in the patent-in-suit is that of requiring the claimed PCS **to possess a MPU of not more than 30g/1000g in (at least) one of the possible "dry states" compatible with the actual execution of the measurement.**

The normal occurrence for the same PCS of different "dry states" dry enough to undergo the MPU test, but still so different in the extent of "dryness" to differ also in the compliance with the MPU requirement, is confirmed by the data reported in ER3, wherein the PCS was however not obtained by the same method disclosed in document (7).

Therefore, and since the patent-in-suit expressly indicates the process of document (7) as being especially suitable for ensuring the desired low MPU, the Board finds that for each PCS prepared with the preferred methods mentioned in the patent-in-suit there must **always** exist at least one (partially) "dry state" that still allows carrying out the MPU test but displays a MPU measured in that test of not more than 30g/1000g, i.e. each PCS prepared with the methods mentioned in the patent-in-suit can always be in a "dry state" complying with the MPU requirement.

The same must be true for the similar process of example 4 of document (7). Hence, it must also be

concluded that the PCS produced in this prior art example satisfies the MPU requirement.

- 1.1.7 Thus, the Board concurs with the finding of the Opposition Division that the PCS of example 4 of document (7) also complies with the 20%-fines and MPU requirements.

Accordingly, the uncoated PCS of example 4 of document (7) is found to possess all the features characterising the **uncoated** PCSs of claim 1 as granted.

- 1.2 Novelty of the **coated** PCS

As discussed above, claim 1 as granted also embraces PCS particles that have been coated with e.g. 1 to 20% by weight of an organic or inorganic coating (see the wording of claim 4, dependent on claim 1, reported above at section II of the Facts and Submissions).

- 1.2.1 The Appellant has not disputed the finding of the Opposition Division that the initial MPU of the starting (uncoated) PCSs is not retained during the coating process and, thus, possibly different from the MPU possibly displayed by the PCS core of the final coated particles. It has argued however that the patent-in-suit would teach to the skilled person how to measure the MPU of the starting PCS particles so that the MPU value obtained would be representative of structural characteristics beneficial to the stability of the coated PCSs. In the opinion of the Appellant these structural characteristics were intrinsic, in the sense that they were unaffected by the subsequent interaction of the particles e.g. with atmospheric

moisture or water, and, thus, they were also retained in the coated final PCSs and contributed to the superior stability of these latter, as proved by e.g. the invention examples 5 and C6 of the patent-in-suit and by the data in ER2.

On the contrary, the skilled person would consider the examples in ER3 not relevant since the MPU values have been determined therein without reaching at least in one case the sample constant weight, and thus they were two samples of the same comparative PCS rather than an experimental comparison between an embodiment of the invention and a comparative example.

- 1.2.2 It is apparent that all these arguments are based on the interpretation of the conditions for measuring the MPU that has been rejected by the Board for the reasons indicated above (see point 1.1.6).

Since it has instead been established that the MPU test of the patent-in-suit is so undetermined that the MPU requirement only implies the occurrence of a MPU of not more than 30g/1000g in (at least) one of the possible "dry states" compatible with the actual execution of the measurement, it is apparently not credible that such parameter of the starting PCS particles may univocally correlate to structural characteristics that are intrinsic of such particles and, thus, also of the coated PCS obtained therefrom.

No credible evidence to the contrary is provided by the comparative tests in the patent-in-suit or in ER2. Indeed, all these data are the results of multiple variant comparisons, i.e. they do not refer to samples

differing only in the MPU of the initial uncoated PCS particles.

The sole experimental data referring to comparisons between PCS particles differing only in their level of dryness and, thus, only in their MPU values, are those reported in ER3, demonstrating that, as predictable, differences in the dryness level of the starting particles have also no bearings on the stability properties of the final coated PCSs.

Therefore, the Board concurs with the finding of the Opposition Division that the MPU values measured in the starting uncoated PCS **cannot** possibly represent a distinctive feature of the **coated** PCSs claimed, not only because the initial occurrence of the required MPU is no longer reflected in the structure of the PCS made by coating in aqueous medium, but also because the MPU test is so undetermined that the occurrence of the required MPU is also dependent on the level of dryness of the starting PCS particles, rather than being univocally correlated to their intrinsic structural properties.

- 1.2.3 It is undisputed that the coated PCSs disclosed in examples B8 or B9 of document (19) expressly possess all the features described in claim 1 except the MPU of the starting PCS.

Since, as discussed above, the MPU requirement has been found to have no characterising function in respect of the **coated** PCSs encompassed in granted claim 1, these latter are anticipated by the coated PCSs of these examples of document (19).

1.3 In view of the above findings the Board concludes that both the **coated** and the **uncoated** PCSs of claim 1 as granted are not novel. Hence the subject-matter of claim 1 as granted does not comply with the requirement of Article 54 EPC 1973 and, thus, the Appellant's main request must be refused.

Auxiliary requests 1, 3 to 5, 7 and 8

2. Novelty of claim 19 of the auxiliary requests 1, of claim 1 of the auxiliary requests 3 and 7 and of claim 18 of the auxiliary request 5 (Article 100(a) in combination with 52(1) and 54 EPC 1973)

2.1 Claim 19 of the auxiliary request 1, claim 1 of the auxiliary requests 3 and 7 and claim 18 of the auxiliary request 5 define the same **uncoated** PCSs as encompassed in granted claim 1 (compare sections II and VII of the Facts and Submissions).

Hence, example 4 of document (7) anticipates their subject-matter for the same reasons indicated above at points 1.1 to 1.1.7 in respect of the uncoated embodiments of claim 1 as granted.

Thus, the Board finds that none the auxiliary requests 1, 3, 5 and 7 complies with Article 54 EPC 1973.

2.2 The subject-matter of claim 1 of the auxiliary requests 4 and 8 differs substantially from that of claim 1 as granted only in that the limit for the MPU requirement has been lowered from "30g/1000g" to

"15g/1000g" (compare sections II and VII of the Facts and Submissions).

The Board notes however that, similarly to claim 1 as granted, also claim 1 of the auxiliary requests 4 and 8 embrace **coated** PCSs.

Since, as discussed at points 1.2.1 to 1.2.2 above, the MPU requirement has no characterising function in respect of the PCSs that are coated, the subject-matter of claim 1 of the auxiliary requests 4 and 8 is found anticipated by the coated PCSs of examples B8 and B9 of document (19) for the same reasons of the coated embodiments of claim 1 as granted. Thus, the Board finds that the auxiliary requests 4 and 8 do not comply with Article 54 EPC 1973.

Auxiliary request 6

3. The Board is satisfied that the subject-matter of claim 1 of this request is novel vis-à-vis the available prior art. No details need to be given in this respect since this subject-matter is nevertheless found not to be based on an inventive step, for the reasons indicated here below.
4. Inventive step: claim 1 (Articles 52(1) and 56 EPC 1973)
 - 4.1 This claim differs substantially from claim 1 as granted only in that it is limited to the **coated** PCSs wherein the amount of the organic or inorganic coating layers is "*from 1 to 5% by weight*" (compare sections II and VII of the Facts and Submissions).

It is undisputed that the most relevant prior art in respect of the coated PCSs claimed is represented by the disclosure of document (19). However, while the Respondents considered relevant prior art that of examples B8 and B9 of this citation, the Appellant has referred to the general disclosure of document (19) which, in the Appellant's opinion, would disclose or imply that the preferred embodiments thereof were those with high amounts of coating layer obtained by the use of sodium chloride as salting-out agent. This teaching would not be reflected in the two specific examples B8 and B9.

The Appellant has argued that the description at page 5, lines 16 to 24, of this citation stressed the importance of using an amount of coating layer sufficient for completely surrounding with constant thickness the PCS core. The same was also evident from the fact that among the examples reported in table at page 23 that with a coating layer of 5% by weight provided the worse results. Thus, it was not possibly obvious to use an amount of coating layer equal to or lower than 5% by weight, because one would expect that such low coating amounts resulted in unacceptably low stability of the coated particles. Hence, the subject-matter of claim 1 of the auxiliary request 6 would at least represent a non-obvious solution to the problem of retaining the advantages in terms of stability of the coated PCSs of the prior art, while simultaneously maximizing their active oxygen content.

- 4.2 The Board notes preliminarily, that the alleged fact that examples B8 or B9 do not provide the best experimental results reported in document (19) or are

not obtained by using the salting-out agents defined as most preferred in this citation, is no reason for considering these examples as not representative of the disclosure in document (19).

Since, as discussed at point 1.2.2 above, the MPU requirement of the starting uncoated PCSs is so undetermined to result in no feature characterising the claimed coated PCSs, the subject-matter of claim 1 of the auxiliary request 6 only differs from these examples of document (19) due to the lower amount of material forming the coating layer.

The Board notes that the patent-in-suit does not attribute any criticality to the preferred coating layer amounts of up to 5% by weight. In particular, the patent-in-suit does not indicate that the now claimed PCSs coated with up to 5% by weight of coating layer surprisingly display a stability that is e.g. at least equal to that of other embodiments of the invention as initially patented, wherein the amount of coating layer may be up to 20% by weight.

Hence, the sole technical problem credibly solved by the claimed subject-matter vis-à-vis the prior art is the provision of an alternative to the prior art.

The Board further notes that the document (19), after having stressed the importance of achieving a complete coating of the PCS, expressly suggests at page 5, lines 25 to 33, coating amounts of **from 0.5** to 25 % by weight because, on the one hand, a coating amount of less than 0.5 % by weight would not allow the achievement of a good stability and, on the other hand,

a coating amount of more than 25 % by weight would dilute the concentration in active oxygen. Hence, the overall teaching of document (19) to the skilled person is that an acceptable stability is obtained as long as the amount of coating layer is in the range of from 0.5 to 25% by weight, as well as, that larger coating amounts correspond to reduced active oxygen concentrations.

Accordingly, the claimed subject-matter is found to result from an arbitrary selection within the more general disclosure of document (19) and, thus, represents an obvious solution to the posed technical problem.

The Board wishes to stress that even if one, for the sake of an argument in favour of the Appellant, disregards the fact that the patent-in-suit does **not** mention the problem of reducing the amount of inert ingredients in PCS and, thus, assumes as credibly implied therein that the inventors were attempting to solve the technical problem of retaining the advantage in terms of stability of the coated PCSs of the prior art while simultaneously maximizing their active oxygen content, it would still be apparent to the skilled reader of document (19) that all embodiments of the general teaching in this citation that also have a low level of coating would represent a solution to the posed problem. In particular, it was obvious to expect that **any** modification of e.g. the examples of document (19), inclusive of those of B8 and B9, in which the amount of coating layer is reduced (while remaining not less than 0.5% by weight) would display the required combination of properties.

The fact that the claimed subject-matter embraces only a portion of the solutions to the posed technical problem that are equally suggested in the prior art (i.e. only the PCSs wherein the coating amount ranges from 1 to 5% by weight) does not attribute any inventiveness to the former. Accordingly, the skilled person would have arrived at the subject-matter of claim 1 without exercising any inventive ingenuity.

- 4.3 Thus, the Board concludes that the subject-matter of claim 1 according to the auxiliary request 6 of the Appellant does not involve an inventive step. Hence, this claim does not comply with the requirements of Articles 52(1) and 56 EPC 1973 and, therefore, also the auxiliary request 6 is not allowable.

Procedural issues

5. Admissibility objections

The Respondents have argued that the Appellant would have submitted ER1 as well as the auxiliary requests 5 to 8, unjustifiably late and, thus, they have requested the Board not to admit any of these late-filed documents into the present appeal proceedings.

- 5.1 As indicated above (see point 1.1.2) it has turned out unnecessary for the Board to decide on the admissibility of ER1 because this latter has immediately appeared to be inconclusive and, thus, has been disregarded.

5.2 In respect of the auxiliary requests 5 to 8, the Board notes that, as also indicated in the facsimile of the Appellant of 17 August 2009, these requests apparently result from the removal of one claim from each of the auxiliary requests that were already on file. Hence, the Board finds that the issues raised by the auxiliary requests 5 to 8 are substantially the same raised by the previous auxiliary requests already on file. Therefore, the Board, exercising its discretion under Article 13(1) RPBA, has decided to admit the auxiliary requests 5 to 8 into the proceedings.

Since these requests fail for the reasons already given above (see points 2 and 4) no further details on this point need to be given.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Rauh

L. Li Voti