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**Datasheet for the decision
of 29 January 2007**

Case Number: T 0669/99 - 3.3.02

Application Number: 91200896.8

Publication Number: 0454221

IPC: A23K 1/175

Language of the proceedings: EN

Title of invention:

A method for preparing an aqueous food supplement for cattle
and thus prepared food supplement

Patentee:

EPENHUYSEN CHEMIE N.V.

Opponent:

N. Geurtsen Magnesiethandel C.V.

Headword:

Food Supplement/EPENHUYSEN CHEMIE

Relevant legal provisions:

EPC Art. 56, 83, 84, 100(a),(b),(c), 102, 104, 106, 107, 108,
114(1), 123(2)
RPBA Art. 10(a)(2)

Keyword:

"Sufficiency (yes): preparation of a saturated solution without precipitation adequately disclosed in the patent"

"Violation of Article 123(2) EPC (no): amendments to the claims directly and unambiguously derivable from the disclosure in the application as filed"

"Inventive step (yes): inventive solution to the problem of providing an aqueous food supplement having a broad variety of valuable nutrients"

"Apportionment of costs in favour of appellant (no): unjustified for reasons of equity"

Decisions cited:

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Catchword:

-



Case Number: T 0669/99 - 3.3.02

D E C I S I O N
of the Technical Board of Appeal 3.3.02
of 29 January 2007

Appellant: N. Geurtsen Magnesiethandel C.V.
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Respondent: EPENHUYSEN CHEMIE N.V.
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Representative: Assendelft, Jacobus H.W.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 23 April 1999
rejecting the opposition filed against European
patent No. 0454221 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: U. Oswald
Members: G. F. E. Rampold
J. H. P. Willems

Summary of Facts and Submissions

- I. The respondent is proprietor of European patent No. 0 454 221 ("the patent") which was granted with 14 claims on the basis of European patent application No. 91 200 896.8, filed on 16 April 1991 and claiming priority of an earlier application in the Netherlands on 26 April 1990 (NL 90 00 996). The application **as originally filed** contained, *inter alia*, independent claims directed to:
- "1. A method for preparing an aqueous food supplement for cattle wherein water and at least one substance is used for preparing an aqueous solution of micro- and macro-elements including at least phosphorus, characterized in that at least phosphoric acid is added to said water in order to lower the pH of said aqueous food supplement to be obtained to such an extent, that substantially no phosphate precipitation takes place and at least one substantially water-insoluble substance is dissolved in said water acidified by said phosphoric acid.
11. A food supplement prepared by applying a method according to anyone of claims 1 to 10, characterized in that it is as substantially saturated solution of micro- and macro-elements, including at least phosphorus, the pH of which is lowered by adding phosphoric acid to such an extent that substantially no phosphate precipitation takes place in the food supplement."

II. The independent claims as **granted** read as follows
(lettering and emphasis added in claim 1 by the board):

- "1. A method for preparing
- (a) an aqueous food supplement for cattle,
comprising
 - (b) dissolved macro and micro elements,
including phosphorus, magnesium, zinc,
copper and manganese,
 - (c) in such predetermined mutual ratios that a
predetermined supplemental feeding of the
cattle is obtained when supplying the food
supplement to the cattle,
 - (d) which method comprises mixing water and
substances in the presence of phosphoric
acid
and is characterized in that
 - (e) **said substances** and said phosphoric acid are
mixed into said water until a saturated
aqueous solution is obtained containing said
macro and micro elements,
 - (f) including 280 to 350 moles of phosphates per
100 kg food supplement,
and in that
 - (g) use is made amongst said substances of **first
substances** selected from the group
consisting of **oxides, phosphates and
carbonates**,
 - (h) in such a predetermined amount that said
aqueous solution has a pH of 3.5 at the most
 - (i) to avoid phosphate precipitation.
9. A food supplement prepared by applying a method
according to any one of the claims 1 to 8,
consisting of an aqueous solution comprising

dissolved macro and micro elements, including phosphorus, magnesium, zinc, copper and manganese, in such predetermined mutual ratios that a predetermined supplemental feeding of the cattle is obtained when supplying the food supplement to the cattle, characterized in that said aqueous solution is a saturated solution containing 280 to 350 moles of phosphates per 100 kg food supplement and containing **first substances** selected from the group consisting of **oxides, phosphates and carbonates**, added in such a predetermined amount in the presence of phosphoric acid that said aqueous solution has a pH of 3.5 at the most to avoid phosphate precipitation.

12. Use of a substantially saturated solution containing at least calcium chloride and/or magnesium chloride as an additional food supplement in combination with a food supplement according to anyone of the claims 9 to 11."
- III. Opposition to the European patent was originally filed by the appellant (opponent) which sought revocation in full on the grounds of lack of novelty and inventive step (Articles 54, 56 and 100(a) EPC) and also on the grounds of insufficient disclosure (Articles 83 and 100(b) EPC) and added subject-matter (Articles 123(2) and 100(c) EPC).
- IV. In the course of the first-instance opposition proceedings, the opponent objected under Articles 100(c) and 123(2) EPC, *inter alia*, to **feature (g)** in claim 1 as granted (see II above) on the grounds that in the application as filed oxides, phosphates and carbonates

were disclosed only in the context of and with reference to certain specific elements, namely magnesium, zinc manganese and copper, whereas feature (g) in claim 1 as amended covered oxides, phosphates and carbonates without further specification as so-called "first substances" in general. This generalisation contravened, in the opponent's opinion, Articles 100(c) and 123(2) EPC.

V. Of the documents cited in the first-instance opposition proceedings and also in these appeal proceedings, the following are also referred to in this decision:

- (2) EP-A-0 454 221 (European patent application No. 91 200 896.8 as published, the content of which is identical with the present application as originally filed)
- (3) ZA-A-832 965
- (4) US-A-3 403 972
- (5) Superba P-Mag brochure, Hydro Agri Markedsseksjon Norge, undated
- (6) Phosphorous and Its Compounds: Volume I, pages 538-541 Magnesium Orthophosphate, undated
- (7) Handbook of Chemistry and Physics, CRC Press, 55th edition, 1974-1975, pages D-212, D-213,
- (8) Solubilities, Inorganic and Metal-Organic Compounds, pages 520, 521, 1678, American Chemical Society, Washington, D.C. 1965
- (9) H. Herrmann, Leistungsgerechte Mineralstoffversorgung: Ein Überblick über die verschiedenen Phosphate für die Tierernährung, Sonderdruck aus "Veterinär-Medizinische Nachrichten", Heft 2, 1970, pages 89-96

VI. The opposition division found that the grounds for opposition mentioned in Article 100 EPC did not prejudice the maintenance of the patent unamended and rejected the opposition pursuant to Article 102(2) EPC at the end of the oral proceedings held before it on 23 March 1999.

VII. The essence of the reasoning in the opposition division's decision was as follows:

(i) As regards the opponent's objection to feature **(g)** under Articles 100(c) and 123(2) EPC, the opposition division essentially argued in its decision (see Reasons, point 2, paragraph bridging pages 6 and 7) along the following lines: "It is clearly stated in the description of the application as originally filed that an object of the present invention is to provide a method for preparing an aqueous food supplement wherein besides water soluble substances also substantially water insoluble substances can be used resulting in a larger choice of substances and which method therefore enables to obtain a higher concentration of desired micro- and macro-elements in the food supplement" (see (2); page 2, lines 21-24). "It is also stated in the originally filed documents that a series of water insoluble substances were soluble in water acidified with phosphoric acid. These substances comprise oxides, phosphates and carbonates" (see (2); page 2, lines 35-40). "Thus the use of substances selected from the group consisting of oxides, phosphates and carbonates has been originally disclosed".

(ii) As regards the opposition under Articles 100(b) and 83 EPC on the grounds of insufficiency of disclosure the opposition division concluded that the skilled reader would know from the disclosure in the

patent what was meant by the terms "substances" and "first substances" used in the claims of the contested patent and had accordingly no difficulties in preparing an aqueous food supplement in accordance with the present claims.

(iii) As regards inventive step the opposition division referred to pages 21-23 of (2) where it was stated that the problem to be solved was to provide a method for preparing an aqueous food supplement, wherein as the nutrition components in addition to water-soluble substances also substantially water-insoluble substances could be used enabling not only a larger choice of substances useful as nutrition components of the food supplement but also a higher concentration of micro- and macro-elements in said food supplement. The opposition division found that the problem posed was plausibly solved by the method of claim 1 and that the solution was not obviously derivable from the cited state of the art.

- VIII. The appellant filed a notice of appeal on 1 July 1999 and paid the appeal fee on the same date and filed a statement of grounds of appeal on 1 September 1999.
- IX. The respondent, by facsimiles from its representative, of 14 December 1999 and 13 March 2000, asked for extensions of time in which to file written submissions in reply to the grounds of appeal. Since no reason for the requested extensions had been given, in a board communication dated 14 March 2000 the respondent was referred to the board's view on time extension summarised in decision T 79/99 of 3 December 1999 (see Reasons, paragraph 2.2).

By a series of further letters and facsimiles, the respondent requested further extensions of time on the grounds of the appointment of a new representative responsible for handling this case and, moreover, to allow the preparation and filing of further evidence in the form of independently-conducted experiments the results of which were said "to have an important impact on the observations to be filed by the appellant". The requested time extensions in which to file the announced written submissions in reply to the grounds of appeal were granted.

- X. By letter dated 23 July 2001, received by the EPO on 25 July 2001, the respondent filed its written submissions in reply to the statement of the grounds of appeal, enclosing its auxiliary requests 1 to 4. In contrast to the respondent's repeated announcements, no further experimental evidence was provided with the respondent's submissions.

- XI. Both parties had requested in their written submissions the appointment of oral proceedings. In a board communication dated 6 February 2003 the parties were summoned to the oral proceedings scheduled to take place on 23 May 2003.

- XII. By fax dated 1 May 2003, the respondent withdrew its request for oral proceedings, unless the appellant for its part did not withdraw (maintained) its own request. In its reply of 2 May 2003, the appellant also withdrew its request for oral proceedings. As a consequence, the oral proceedings were cancelled by the board.

XIII. The arguments of the appellant in its statement setting out the grounds of appeal, only in so far as they are relevant to this decision, can be summarised as follows:

[1] As to the opposition on the ground of added subject-matter (Articles 100(c) and 123(2) EPC), the appellant submitted that the application as filed related to a method of preparing an aqueous food supplement for cattle wherein the substance or substances used as the nutritional materials were merely specified in claim 1 as little or not soluble in water. These water-insoluble substances were dissolved in water in the presence of phosphoric acid to form an aqueous solution. This was, in the appellant's opinion, clearly described in originally filed claim 1 (see I above).

[2] The appellant maintained that during the examination proceedings claim 1 was limited to the use of **oxides, phosphates and carbonates of "substances"** in general as the water-insoluble substances. According to the appellant, this was an inadmissible amendment which was not supported by the content of the application as originally filed, because the original disclosure referred in the context of oxides, phosphates and carbonates only to certain specifically designated chemical compounds, such as oxides, phosphates and carbonates of magnesium, zinc, copper and manganese. The appellant did not share the opposition division's view in the contested decision and argued that the inadmissible extension was not to be seen in the reference to oxides, phosphates and carbonates as the water-insoluble substances as such, but in the fact that the claims as amended contained a mere general

reference to these oxides, phosphates and carbonates, whereas in the disclosure in the application as filed mention was only made of oxides, phosphates and carbonates of certain specific chemical elements such as magnesium, zinc, copper and manganese. Therefore, claims 1 and 9 as amended contravened Article 123(2) EPC.

[3] The appellant also pointed out that the patent related to the preparation of a saturated solution and argued that the patent did not describe the temperature at which the point of saturation occurred. It also argued that, in accordance with the claimed invention, it was essential that the claimed aqueous food supplement did not form a precipitate. The appellant concluded that in the absence of any indication of the temperature at which the point of saturation occurred it was impossible to those skilled in the art to prepare the food supplement in the form of a saturated aqueous solution without any precipitation occurring in that solution. On the basis of these arguments the appellant maintained that the claimed invention was only insufficiently disclosed contrary to the requirements of Articles 100(b) and 83 EPC.

[4] As regards inventive step the appellant stated that the opposition division did not take into consideration that a similar Dutch patent application (No. 9000996) was not considered patentable by the Dutch patent office during prosecution of this application in the Netherlands. In the appellant's opinion the decision in the Netherlands was also of importance to the validity of the present European patent including the Netherlands as one of the

contracting states, in view of the aim of harmonising patent protection within the contracting states.

[5] The appellant mentioned that the patent related to aqueous food supplements for cattle which contained the nutrients in a soluble form. In its opinion it was known that the digestion of liquid nutrients was better than that of solid nutrients and that aqueous food supplements as such were already known. The disadvantages associated with the known aqueous food supplements were that only a limited amount of valuable mineral nutrients could be dissolved in water without forming precipitants.

[6] The appellant agreed that the closest state of the art was citation (3). This citation described a method for the preparation of an aqueous food supplement for cattle containing certain macro- and micro-elements in a predetermined amount by mixing water and substances in the presence of phosphoric acid. The disadvantage of the food supplement disclosed in (3) was the relatively small content of valuable nutrients. The problem to be solved by the patent was thus to provide an aqueous food supplement having a higher content and a broader variety of valuable nutrients.

[7] The appellant argued that those skilled in the art starting from (3) and faced with the technical problem mentioned above would simply dissolve more of the salts already present in the aqueous food supplement. This would increase the amount of valuable nutrients to the desired extent, until the point of saturation of the solution was achieved. In the appellant's opinion, for a further increase in the amount of valuable nutrients

in the food supplement, the skilled person would consider decreasing the concentrations of any elements which were deemed to be not valuable as nutrients, such as sulphate and chloride ions.

[8] Those skilled in the art knowing from (3), (4) and (5) that phosphates are useful as nutrients would in a next step replace nutrients which are considered to be not or only valuable with phosphates. A chemist would know, for example from (8) that primary phosphates were more easily soluble in water than secondary or tertiary phosphates and this person would also know that primary magnesium and zinc phosphates are sufficiently soluble in water so that the problem of precipitation did not arise and, accordingly, a stable solution was obtained.

[9] According to the appellant, the use of oxides as nutrients for the food supplement was obvious in the light of the teaching of citation (4) which described the combination of oxides of magnesium and concentrated phosphoric acid as resulting in the formation of magnesium orthophosphates. In the preparation of the salt mixture disclosed in (4), an oversaturated solution of magnesium oxide was used resulting in a "magma". However, this citation made it clear that the use of magnesium oxides and phosphoric acid to obtain a food supplement containing magnesium in combination with a phosphate as the anion was already known in the state of the art.

[11] The appellant also considered that the following similarities existed between the claims in the above-mentioned Dutch application and claim 1 of the European patent:

1. food supplement: almost saturated solution
2. food supplement: substantially free of phosphate precipitates
3. method: oxides of minerals dissolved by means of phosphoric acid
4. inventive concept: dissolving a higher concentration of minerals by dissolving said minerals in the form of primary phosphates thereby excluding undesired anions.

[12] The appellant pointed out that items 1 and 2 mentioned above were not considered inventive by the Dutch Patent Office in view of the teaching of citation (3), whereas items 3 and 4 mentioned above were considered to be obviously derivable from the disclosure of citation (4). The appellant concluded that the additional features in present claim 1 did not add anything inventive to the claim.

[13] In conclusion, the appellant maintained that the claimed subject-matter in the patent followed plainly and logically from the prior art and did not require the exercise of inventive skill.

XIV. The respondent's arguments in its written submissions, only in so far as they are relevant to this decision, can be summarised as follows:

[14] The respondent stated that the general expression "substances" in the context of oxides, phosphates and carbonates was disclosed on page 2, lines 35-40 of (D2), i.e. page 2, lines 22-30, of the application as originally filed and that this was also the opinion of the opposition division in the decision under appeal (see the paragraph bridging pages 6 and 7). The

opposition division was, in the respondent's opinion entirely correct in its finding that the claims as amended complied with Article 123(2) EPC and that the use of oxides, phosphates and carbonates in general as the "first substances" was clearly and unambiguously derivable from the disclosure of the claimed invention in the application as filed.

[15] If there were any residual doubts as to the admissibility of the disputed amendment, these would have been removed, in the respondent's opinion, in the auxiliary request by the specification of the "substances" in claims 1 and 9 of the auxiliary requests as "substantially water insoluble substances".

[16] The respondent maintained that the pH value of 3.5 provided a stable solution of the claimed aqueous food supplement which was substantially insensitive to changes of temperature, at least to the changes within the range occurring during use of the food supplement. The requirements laid down in Articles 100(c) and 83 EPC were accordingly met.

[17] As to inventive step, the respondent pointed out that starting from citation (3) as the closest state of the art the appellant itself admitted in its submissions that non less than the following four individual steps were required in order to arrive at the claimed invention in the patent:

- increasing the amount of salts dissolved in the solution of the food supplement disclosed in (3);
- looking for a method allowing a decrease of the concentration of undesirable anions;
- replacing nutrients which are less valuable with phosphates;

- determining the amount of phosphoric acid to obtain a saturated solution without forming precipitates. The respondent went on to state that no arguments, let alone evidence, was provided on the part of the appellant explaining why it should have been obvious to a person skilled in the art to carry out the four consequential steps mentioned above in order to arrive at the claimed invention.

[18] As regards the other citations introduced by the appellant, the respondent noted that citation (4) did not address the problem underlying the patent and that citation (5) related to a fertilizer and not to a food supplement. Citation (8) did not add in the respondent's opinion anything new to the state of the art already on file. As far as citation (9) was concerned, the respondent argued that this citation was no more relevant than citation (4). Moreover, since it was reported in (9) that $MgHPO_4$ was sparingly soluble in water, those skilled in the art would, in the respondent's opinion, not rely on the teaching of (9) in order to achieve an improvement over the closest state of the art according to citation (3).

[19] The decision in the similar Dutch application referred to by the appellant was in the respondent's opinion entirely irrelevant to the present case in view of the substantial differences between the features of the claims in that application and those in the present patent.

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

The respondent requested that the appeal be dismissed and that the patent be maintained as granted (main request) or that the decision under appeal be set aside and that the patent be maintained on the basis of its first, second, third or fourth auxiliary request, all filed on 25 July 2001. As a further auxiliary request it requested that the case be remitted to the department of first instance and an apportionment of costs, if the late-filed citation (9) is admitted into the proceedings.

Reasons for the decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.
2. *Procedural matters*
 - 2.1 In its statement setting out the grounds of appeal, the appellant requested, *inter alia*, that oral proceedings be held, "in case the Board of Appeal intends to uphold the patent, either as a whole or in part". The respondent requested oral proceedings in its reply dated 23 July 2001 to the statement of the grounds of appeal.
 - 2.2 As is apparent from XII above, both the appellant and the respondent, although already duly summoned to attend the hearing before the board scheduled to take place on 23 May 2003, withdrew their requests for oral proceedings about three weeks in advance of the date of that hearing.

2.3 The statement setting out the grounds of appeal was sent to the respondent by a communication dated 14 September 1999 in which it was stated that "any submission in answer hereupon must be filed within four months". Thereafter, the board acceded to about eight of the respondent's requests by allowing the requested extensions of time in which to file written submissions in reply to the grounds of appeal. The respondent submitted its written observations on 25 July 2001 by letter of 23 July 2001. Thus, during the period from September 1999 until July 2001, it had ample time and opportunity to study the case and to prepare and present its arguments in reply to the statement of the grounds of appeal. Indeed, the respondent used this opportunity by filing together with its observations, in addition to the main request that the appeal be dismissed, four new auxiliary requests in response to the appellant's submissions in the statement of the grounds of appeal.

2.4 Since then the appellant, on the other hand, had also sufficient time in which to consider and prepare arguments in reply to the observations and requests submitted by the respondent.

2.5 Moreover, both parties were given the opportunity to present their cases at the hearing before the board. By deliberately not attending the oral proceedings already scheduled, the parties deprived themselves willingly of the possibility to produce further comments.

2.6 On the basis of the above considerations, the board comes to the conclusion that, in the circumstances of the present case, considering and deciding in substance

on this appeal case on the parties' written cases does not contravene the parties' procedural rights as laid down in Article 113(1) EPC.

3. *Admissibility of citation (9) into the proceedings*

The respondent objected to the admissibility of citation (9) into the proceedings on the grounds that this citation was filed too late. The board considers that citation (9) filed with the statement of the grounds of appeal should be admitted as evidence because in the circumstances of this case the respondent had sufficient time in which to consider and prepare arguments in reply to this evidence.

Main request

4. *Amendments before grant (Articles 100(c) and 123(2) EPC)*

4.1 During opposition proceedings and again in the statement setting out the grounds of appeal, the appellant specifically objected under Articles 100(c) and 123(2) EPC to **feature (g)** in claims 1 and the corresponding feature in claim 9 as granted (see II above).

4.2 Article 123(2) EPC requires that "a European patent application or a European patent may not be amended in such a way that it contains subject-matter extending beyond the content of the application as filed". The idea underlying this provision is that an applicant should not be allowed to improve his position during the examination procedure by adding subject-matter not disclosed in the application as filed, thus giving him

an unwarranted advantage and possibly being detrimental to the legal security of third parties relying on the contents of the application as filed (see G 1/93, OJ 1994, 541, No. 9 of the reasons of the decision). This idea holds of course also in respect to a patent proprietor and the opposition procedure.

4.3 According to established case law of the EPO (see "Case Law of the Boards of Appeal of the European Patent Office", 4th edition, 2002, pages 197 ff), any amendment of a European patent application or European patent must have an **adequate basis** in the application as originally filed in the sense that it must be **directly** and **unambiguously derivable** from the originally filed documents, even if - as in the present case - such amendment results in a limitation of the scope of the claims by the addition of one or more technical features.

4.4 The originally used broader definition "**and at least one substantially water-insoluble substance is dissolved in said water acidified by said phosphoric acid**" in original claim 1 (see I above) has been amended during examination in feature (g) in present independent claim 1 and similarly in claim 9 so as to read "**which method comprises mixing water and substances in the presence of phosphoric acid and is characterized in that said substances and said phosphoric acid are mixed into said water until a saturated aqueous solution is obtained containing said macro and micro elements including 280 to 300 moles of phosphates and in that use is made amongst said substances of first substances** selected from the group

consisting of oxides, phosphates and carbonates" (see II above).

4.5 In accordance with Article 123(2) EPC the original disclosure determines the reservoir of possible amendments before grant. Regarding the technical feature at the end of claim 1 as originally filed ("and at least one substantially water-insoluble substance is dissolved in said water acidified by said phosphoric acid"), the relevant disclosure **in the whole context** of the claims and the description as originally filed reads as follows (emphasis added by the board):

(i) see page 2, lines 1-12:

*"An object of the present invention is to provide a method for preparing an aqueous food supplement wherein besides water soluble substances also **substantially water insoluble substances** can be used resulting in a larger choice of substances and which method therefore enables to obtain a higher concentration of desired micro- and macro-elements in the food supplement. To this end, a method according to the invention is characterized in that at least phosphoric acid is added to said water in order to lower the pH of said aqueous food supplement to be obtained to such an extent, that substantially no phosphate precipitation takes place and **at least one substantially water insoluble substance is dissolved in said water acidified by said phosphoric acid.**"*

(ii) see page 2, lines 22-30:

"The use of phosphoric acid involves further also the important advantage that **a series of water insoluble substances** are soluble in water acidified with phosphoric acid. These substances comprise for example **oxides and secondary and tertiary phosphates** of a. o. magnesium and zinc. These substances react with phosphoric acid to form **the water soluble primary phosphates**. In this way, no undesired anions are added to the solution. The **same goes for carbonates**, the carbonate group of which escapes as CO₂ gas out of the solution after reaction with phosphoric acid."

(iii) see page 6, lines 28-35:

"In the method according to the invention an aqueous solution is prepared comprising at least phosphorus as macro-element. This macro-element phosphorus is added at least partially as phosphoric acid to water so that acidified water is obtained wherein **substances, such as oxides, which are little or not water soluble**, can be dissolved. For preparing the aqueous food supplement use is made of at least such an amount of phosphoric acid that the pH of the food supplement is sufficiently low to prevent phosphate precipitation."

(iv) see page 8, lines 5-6:

"After having dissolved the little or **not water soluble substances**" [i.e. the substances designated "first substances" in present claims 1 and 9], "the water soluble substances are dissolved."

4.6 In the board's judgment, there can be no doubt that **feature (g)** as amended finds a sound basis in the disclosure of the application as filed cited in 4.5 above and is accordingly not open to an objection under Articles 100(c) and 123(2) EPC.

4.7 In the notice of opposition and again in the statement of the grounds of appeal, the appellant made a further detailed attack on **feature (g)** under Articles 100(c) and 123(2) EPC on the grounds that a contravention of these articles was to be seen in the unacceptable generalisation of this feature in present claim 1 from the disclosure in the original documents which specifically relate to "first substances" selected from the group consisting of oxides, phosphates and carbonates of oxides only of the elements **magnesium, zinc, copper and manganese**. According to the appellant, the unacceptable extension of the claimed subject-matter did not lie in the use of oxides, phosphates and carbonates as such, but in the use of such oxides, etc. of **any** substance. In this context the appellant argued that the application made mention only of oxides, etc. of magnesium, zinc, copper and manganese and not of **any** conceivable substances. While the board has some sympathy with these arguments, the objection made by the appellant cannot be based upon Articles 100(c) and 123(2) EPC. The objection that the appellant apparently intended to make to the claims as amended is one under Article 84 in conjunction with Rule 29(1) and (3) EPC, namely that the claims are too broad and not adequately supported by the description.

4.8 However, Article 102(3) EPC does not allow objections based upon Article 84 EPC if they do not arise out of the amendments made during opposition proceedings to

the claims or other parts of the patent. This is the case here; feature (g) "First substances selected from the group consisting of oxides, phosphates and carbonates" was identically worded in the patent as granted (see II above).

5. *Sufficiency*

(Articles 100(b) and 83 EPC)

5.1 An attack on the grounds of insufficiency under Article 100(b) EPC is of course based on Article 83 EPC which requires that the disclosure of the invention must be "sufficiently clear and complete for it to be carried out by a person skilled in the art". It is understood that this means that substantially any embodiment of the invention, as defined in the broadest claim, must be capable of being realised on the basis of the disclosure.

In accordance with the consistent case law of the boards of appeal, sufficiency of disclosure within the meaning of Article 83 EPC may under no circumstances be adjudged solely on the basis of the claims, but must be assessed on the basis of the application as a whole - including the description and the claims.

5.2 In the absence of any evidence to the contrary, the board considers that the disclosure of the claimed method in the patent (see especially page 2, lines 24-43; page 3, line 8, to page 5, line 29) is enabling to prepare a food supplement in the form of a saturated aqueous solution which contains neither undissolved ingredients nor precipitates.

- 5.3 In its statement setting out the grounds of appeal, the appellant essentially argued that the patent did not describe the saturation temperature of the claimed food supplement in the form of a saturated aqueous solution and that in a food supplement, if being prepared at an elevated temperature, e.g. in a country having a relatively warm climate, and then transferred into a cooler area, precipitation of solids in the solution would occur. However, apart from the fact that the point of saturation not only depends on the temperature but also on the nature and choice of the ingredients (salts) in the aqueous solution and may thus vary broadly, those skilled in the art knowing that they would transfer the food supplement from the place of production to a cooler area would simply produce an aqueous solution having a concentration of ingredients slightly below the point of saturation.
- 5.4 In the present case, a skilled person will even, on the basis of his general knowledge of the art, rule out entirely unrealistic concentrations of ingredients in the aqueous food supplement of the invention. He will also be guided by the disclosure in the patent (description and claims) of the preferred weight ratios of phosphoric acid relative to the total amount of feed supplement and the pH range of between 2.5 and 3.5 required to avoid phosphate precipitation. In seeking suitable weight ratios for the nutritional ingredients of the food supplement, which may vary considerably depending on the nature of these ingredients (salts), the skilled person is given precise directions in the examples of the patent which disclose, in Tables 1 to 3, the exact compositions of saturated aqueous solutions of food supplements in accordance with the

invention - should he need them - as to how he can determine the point of saturation depending on the concentration of the ingredients and pH value in the aqueous solution.

5.5 In view of the foregoing the board is of the opinion that the requirements of Article 83 EPC are satisfied for the subject-matter of all claims, which was also the conclusion of the opposition division.

6. *Novelty*

(Articles 100(a), 52(1) and 54 EPC)

The board is satisfied that the subject-matter of the claims is not disclosed in any citation available in the proceedings and, therefore, meets the requirements of Articles 52(1) and 54 EPC. Since, at the appeal stage, the opposition on the ground of lack of novelty was no longer maintained by the appellant, further details need not be given.

7. *The problem and the solution*

7.1 There was general agreement that citation (3) represents the closest and therefore the most relevant state of the art. This citation discloses a method for preparing an aqueous composition useful as a ruminant feed supplement comprising as an essential ingredient urea and dissolved macro- and micro-elements as those terms are to be understood in the patent, including *inter alia* phosphorus, magnesium, zinc, copper, manganese, cobalt, selenium, various other trace metals and vitamins, and optionally molasses to improve the palatability of the composition. The composition

disclosed in (3) is provided in the form of an aqueous solution enabling it to be used effectively and easily by the farmer. It may be poured or sprayed onto suitable roughage which is then converted into an excellent feed material containing all the ingredients necessary for growth and weight gain and health.

The phosphorus is preferably provided in the composition in the form of phosphoric acid. It is also disclosed in citation (3) that the phosphoric acid tends to break down the bonds existing between the cellulose and **lignin in the roughage**, rendering the roughage more digestible (see page 3, line 5, to page 5, line 19).

The aqueous solution useful as a ruminant feed supplement disclosed in (3) is made by first adding phosphoric acid and molasses to water. The other ingredients, **in water soluble form**, are **dissolved in water** and the solutions so obtained added to the phosphoric acid/molasses/water base (see especially page 5, lines 20-24).

- 7.2 From the introductory portion of the patent it is clearly derivable that a method for preparing an aqueous food supplement comprising the steps disclosed in (3) and, accordingly, the food supplement itself prepared by that method suffer from the drawbacks that, in order to obtain an aqueous solution comprising the desired broad variety of nutritional ingredients (micro- and macro-elements), all these ingredients must be provided in the form of water soluble substances and, moreover, that the choice and availability of such substances is limited. As a consequence of this, it is

also necessary in practice to use different kinds of substances which add to the aqueous solution of the food supplement besides the desired and intended nutritional elements an undesired amount of redundant and possibly detrimental components, such as e.g. an undue amount of undesired anions, such as, for example chloride anions. This results not only in a reduced nutritional value of the food supplement, but also in an undesirable reduction of the solubility of other valuable ingredients (see patent specification page 2, lines 3 to 19).

7.3 Starting from citation (3) as the closest prior art, the technical problem to be solved was thus to overcome the above drawbacks associated with the ruminant food supplement disclosed in citation (3) and the known method of preparing a food supplement in the form of an aqueous solution comprising the desired broad variety of nutritional ingredients (micro- and macro-elements).

7.4 The solution proposed in the patent essentially consists in the provision of the claimed aqueous food supplement and a method for preparing such an aqueous food supplement comprising the steps of

- first dissolving in water sparingly soluble or water-insoluble substances ("first substances") selected from the group of oxides, carbonates and phosphates in the presence of a predetermined amount of phosphoric acid which is sufficient to dissolve these substances and to adjust the pH of the aqueous solution to a value between 2.5 and 3.5 maximum in order to avoid phosphate precipitation, followed by

- dissolving in the aqueous solution thereby obtained then other desired ingredients in the form of their water- soluble salts.

7.5 From the disclosure of the claimed invention in the description (see especially the examples of suitable food supplements according to the invention in Tables 1 to 3), and in the absence of any credible evidence to the contrary, the board is satisfied that the problem posed has been solved by the provision of the claimed food supplement and the claimed process for preparing that food supplement.

8. *Inventive step*

8.1 It still remains to be examined whether the claimed solution involves an inventive step with regard to the teaching of the cited documents.

8.2 In the appellant's opinion, a skilled person wishing to increase the concentration of the desired ingredients in the aqueous feed supplement described in citation (3) would simply dissolve in that food supplement an increased amount of these ingredients in water soluble form. However, the appellant's suggestion fails to take account of the fact that the addition of an increased amount of ingredients in water soluble form to the aqueous food supplement would clearly not solve the stated technical problem. As the appellant itself conceded, phosphoric acid is used in citation (3) to break down the bond existing between cellulose and lignin in the roughage, rendering the roughage more digestible. This use of phosphoric acid and the effect thereby achieved are indisputably different from that

disclosed in the patent where phosphoric acid is used to convert water-insoluble oxides, phosphates and carbonates into water-soluble primary phosphates enabling them to be dissolved as valuable nutritional components in high concentration in the aqueous solution of the food supplement, without adding an undue amount of undesirable anions. There is not the faintest indication in (3) that phosphoric acid in a suitable amount could be used to solve the problem posed.

- 8.3 Assuming that those skilled in the art may look around for a solution to the problem they are called upon to resolve in closely related fields of art, they would find in citation (4) a process for making a **solid** salt mixture being useful as an animal feed additive formed of sodium, magnesium and optionally calcium orthophosphates. This solid salt mixture can be prepared in a single step by a process wherein a mixture of orthophosphoric acid, a sodium hydroxide or carbonate solution and/or sodium phosphates or mixtures of sodium orthophosphates and orthophosphoric acid, as well as magnesium oxide optionally in admixture with calcium oxide as the starting products, are reacted with each other with permanent agitation and mixing. In view of the foregoing it appears clear that the prior art of (4) neither addresses the problem underlying the claimed invention nor contains any suggestion for solving the problem of providing an **aqueous** food supplement for cattle having the properties and capabilities described in the patent.

- 8.4 Citations (5),(6),(7) and (8) only describe the solubility characteristics of various phosphates, and

in particular those of the different kinds of magnesium phosphates. The teaching of these documents cannot contribute positively to inventive step because all these documents merely demonstrate some solubility characteristics of various phosphates and are therefore unable to provide the skilled person with any clue that might lead him to the problem posed and its solution as claimed in the patent.

- 8.5 Citation (9) relates to the use of phosphates in feed material for ruminants. The appellant is correct when it states that, in the light of the disclosure of citation (9), it might be considered as obvious for a skilled person to add the nutritional elements Ca, P, Na and Mg to food supplements in the form of their water-soluble phosphates, that is to say as sodium, calcium and magnesium phosphates (see page 2, penultimate paragraph). It is also said that the mixtures of mineral salts described in (9) are particularly advantageous in that in these mixtures the proportion of detrimental chloride anions could sufficiently be reduced (see page 4, end of the paragraph below Table 3). However, citation (9) contains no teaching or suggestion to the effect that the desired nutritional elements should be added to the food supplement in the form of their water-insoluble oxides, phosphates and carbonates, which are then dissolved in an aqueous environment by means of phosphoric acid to produce an aqueous food supplement in the form of a saturated aqueous solution containing a broad variety of nutritional elements. Merely on the basis of the teaching of the patent not only a larger choice of substances useful as nutritional components of the food supplement but also a higher concentration

of micro- and macro-elements in said food supplement can be achieved.

- 8.6 As none of the above- cited documents (4) to (9) taken alone would direct the skilled person in the direction of the proposed solution, the question has to be examined whether therein he would find the teachings that combined with those of the closest state of the art according to (3) could possibly lead to the invention. This, however, cannot be answered affirmatively for the following reasons: Although the skilled person would learn from those documents that certain types of phosphates and other salts are easily soluble in water and are also extremely useful as nutritional components of food supplement, he would find no teaching or suggestion in these documents pointing him in the direction of the solution to the problem posed, as none of these documents teaches the use of water-insoluble substances in combination with water-soluble substances, in order to prepare a food supplement in the form of a saturated aqueous solution with a high concentration of desirable nutritional components and a low concentration of undesirable or even detrimental anions and without forming precipitations.
- 8.7 The requirement of inventive step is therefore also met.
9. As regards the appellant's reference to the decision in appeal proceedings relating to a corresponding patent application in the Netherlands, as a general remark it should be noted that the principle of "examination of the European Patent Office of its own motion" (Article 114(1) EPC) applies before the opposition

division and the board of appeal. This is made clear both by the terms of that provision and by Article 102(1) to (3) EPC, which stipulates that decisions concerning oppositions hinge upon the opposition division's and, accordingly, the board's opinion with regard to patentability (Article 52 et seq. EPC) and other requirements of the Convention. In forming its opinion, the board is not in any way bound by the opinion of a national patent office or court either within or outside the territory of the contracting states of the EPC. Moreover, in the present case it is evident that certain technical features in the claims of the cited Dutch patent application are fundamentally different from those in the present European patent under consideration.

10. *Request for apportionment of costs*

10.1 The respondent applied in its reply to the statement of the grounds of appeal for an apportionment of costs under Article 104(1) EPC, without giving detailed reasons in support of its claim.

10.2 The board believes costs should be awarded, for reasons of equity, if a party to proceedings can be held to have caused unnecessary expense that could well have been avoided with normal care. In its opinion, these criteria have not been met in the present case. In the board's view, it is justified that a party which has lost in the opposition proceedings tries in the appeal proceedings to fill a presumed missing link, i.e. in the present case by filing the additional citations (8) and (9) and completing the line of arguments based on these citations. In the present case, the filing of two additional documents and presentation of further arguments, based on these documents and also on those

already filed in the proceedings before the first instance, could be seen as a reaction to the decision of the opposition division and has been made, in accordance with Article 10(a)(2) RPBA, at the earliest possible moment, namely with the submission of the statement of grounds of appeal. Since this statement contains the appellant's complete case, the board has reached the conclusion that no reasons of equity exist which would justify an apportionment of costs in the respondent's favour.

Order

For these reasons it is decided that:

1. The appeal is dismissed.
2. The request for apportionment of costs is refused.

The Registrar:

The Chairman:

A. Townend

U. Oswald