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Datasheet for the decision of 16 March 2012

Case Number: T 1825/10 - 3.3.09

Application Number: 06723938.4

Publication Number: 1866362

IPC: C08J 9/00

Language of the proceedings: EN

Title of invention:
Foam-like preparation and process for the production thereof

Applicant:
Schwan-STABILO Cosmetics GmbH & Co. KG

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 83, 84, 123(2)

Keyword:
"Clarity, sufficiency of disclosure (yes)"
"Added subject-matter (no)"
"Remittal"

Decisions cited:
-

Catchword:
-

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Case Number: T 1825/10 - 3.3.09

D E C I S I O N
of the Technical Board of Appeal 3.3.09
of 16 March 2012

Appellant: (Applicant)
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Representative:
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Decision under appeal:
Decision of the Examining Division of the European Patent Office posted 23 March 2010 refusing European patent application No. 06723938.4 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman: W. Sieber
Members: W. Ehrenreich
R. Menapace

Summary of Facts and Submissions

I. European patent application No. 06 723 938.4 filed on 31 March 2006 as international application No. PCT/EP2006/002978 in the name of *Schwan-STABILO Cosmetics GmbH & Co. KG* was refused by the examining division by its decision announced orally on 8 March 2010 and issued in writing on 23 March 2010.

II. The decision was based on a set of claims 1 to 8 presented in the oral proceedings, and claims 9 to 30 submitted with the letter dated 28 April 2008 which corresponded to claims 10 to 31 as originally filed.

Claim 1 read as follows:

"1. A foam-like preparation in the form of an emulsion comprising a continuous phase, a discontinuous phase, and a gas, wherein the continuous phase is a thickening system comprising a thickening agent, wherein the proportion of the thickening agent in the thickening system is 0.5 to 5% by weight and wherein the discontinuous phase comprises a structuring agent, wherein the thickening system has a miscibility gap with a critical temperature of at least 45°C."

Claims 2 to 21 were dependent product claims. Independent claim 22 was directed to a process for the production of a foam-like preparation. Claims 23 to 30 were dependent process claims.

III. Under point 3 of the reasons for the decision the examining division argued that the invention claimed in claim 1 was insufficiently disclosed, contrary to the

requirements of Article 83 EPC. Insufficiency of disclosure was the only reason for refusal of the application.

As to the miscibility gap with a critical temperature of at least 45°C according to claim 1 the examining division did not accept the applicant's view that this parameter was well-known in the prior art and could be determined by simple measurements by employing the naked eye. Rather, in the examining division's view claim 1 was directed to an emulsion and the miscibility gap could not be measured in the emulsion itself, but had to be determined at the continuous phase before mixing it with further components to form the emulsion. The skilled person was therefore not able to investigate an emulsion for determining the critical temperature of a thickening system contained in the emulsion. Because the application as a whole did not provide any technical information about the measurement of this parameter and the skilled person, in applying his common general knowledge, was not able to determine it in the claimed emulsion, the subject-matter of claim 1 was insufficiently disclosed.

The examining division further pointed out that claim 1 failed to explain which technical terms the feature "thickening system" implied. Since any component in the thickening system inevitably influenced its critical temperature, the critical temperature itself was unclear as it depended on the definition of the thickening system. The skilled person could therefore not safely assess whether or not a certain subject-matter was within the ambit of the claim.

IV. In point 5 of the decision the examining division raised further objections under Article 84 EPC. It was pointed out that these objections were not decisive because the applicant did not have ample opportunity to comment on them. The following points were raised:

(a) Claim 1 failed to indicate whether the amount of 0.5 o 5% for the thickening agent referred to the continuous phase or to the emulsion;
(b) The temperature and the method for measuring the viscosity were not defined in claim 2;
(c) It was unclear how a thickening system could have a miscibility gap if an emulsifier according to claim 9 was present;
(d) The term "long-chain fatty acid" in claim 12 was unclear.

V. Novelty and inventive step were not dealt with in the decision.

VI. Notice of appeal against the decision was filed by the applicant (hereinafter: appellant) on 26 May 2010. The prescribed fee was paid on the same day. The statement of the grounds of appeal was received on 29 July 2010.

VII. With the summons dated 27 October 2011 oral proceedings were scheduled for 16 March 2012. In a communication dated 30 January 2012 (submitted in advance per fax on 25 January 2011) the board made its preliminary observations on essential issues of the case, i.e. amendments (Article 123(2) EPC), clarity (Article 84 EPC) and sufficiency of disclosure (Article 83 EPC). The board also pointed out that remittal of the case was intended if claims were

elaborated, meeting the requirements of the afore-mentioned Articles.

VIII. In response to the board's communication the appellant filed, with its letter dated 1 March 2012, a new set of claims 1 to 30. Enclosed with the letter was an experimental report including photographs in order to demonstrate that a skilled person could determine the miscibility gap of the thickening system without undue burden.

Claim 1 of the new set of claims differed from claim 1 underlying the appealed decision by the definition of the critical temperature as a lower critical temperature (emphasis by the board) and the change of the temperature range from "at least 45°C" to "between 35 and 80°C".

IX. During the oral proceedings before the board the claimed subject-matter was discussed under the aspects of added subject-matter, clarity and sufficiency of disclosure. In reaction to this discussion the appellant submitted a new set of claims 1 to 27. Claim 1 now reads as follows:

"1. A foam-like cosmetic preparation in the form of an O/W emulsion comprising a continuous phase, a discontinuous phase, and a gas, wherein the continuous phase comprises a thickening system being formed by water or an aqueous medium and a thickening agent, wherein the proportion of the thickening agent in the thickening system is 0.5 to 5% by weight and wherein the discontinuous phase comprises a structuring agent,

wherein the thickening system has a miscibility gap with a lower critical temperature between 35 and 80°C."

Claims 2 to 18 are dependent product claims. Claim 19 and dependent claims 20 to 27 are directed to a process for the production of the preparation as defined in claim 1.

X. The arguments of the appellant provided in writing and orally, as far as they are relevant for the subject-matter of the new claims, can be summarized as follows:

(a) Article 123(2) EPC

The limitations in claim 1 to a cosmetic O/W preparation, to a lower critical temperature of the thickening system in a range of between 35 and 80°C, and to the thickening system composed of a thickening agent and water/aqueous medium were disclosed on page 5, lines 13 to 16 and 25 of the application as filed.

(b) Article 84 EPC

The indication in claim 1 that the claimed preparation is an O/W emulsion, in combination with the amended definition that the thickening system in the continuous phase is formed by water or an aqueous medium and a thickening agent rendered the claim clear in that the proportion of the thickening agent in the thickening system now exclusively related to the two components: water or aqueous medium plus thickening agent.

Deletion of claims 2, 5 and 12 from the old claim version removed further unclear definitions in the dependent claims, i.e. viscosity without temperature, the terms "short-chain" and "long-chain".

(c) Article 83 EPC

The meaning of the terms "emulsion", "continuous phase", "discontinuous phase" and "miscibility gap" was well-known to a skilled person. He was therefore immediately aware that it was the intention of the teaching of the application to determine the critical temperature of the miscibility gap for the thickening system formed by the continuous phase and the thickening agent before an emulsion comprising the continuous and the discontinuous phase was prepared. This was important because, during preparation of the emulsion, the continuous phase comprising the thickening system and the discontinuous phase had to be heated to a temperature above this predetermined critical temperature of the thickening system in order to reduce the viscosity of the continuous phase by precipitation of the thickener. This reduced viscosity then allowed an easy mixing of the continuous with the discontinuous phase with high shear, thereby forming the emulsion and entraining gas or air in the system. During cooling the emulsion below the critical solution temperature of the thickening system, the thickening agent was dissolved, thereby thickening the continuous phase and entrapping the gas in order to stabilize the foam.

As was shown by the experiment, and the photographs enclosed with the letter dated 1 March 2012, it was no undue burden for a skilled person to determine the lower critical temperature of the thickening system. In the experiment a clear solution of the thickening system was slowly heated without stirring until, at a certain temperature, the thickening agent begins to precipitate out of the solution. The temperature at this precipitation point was the critical temperature of the miscibility gap. Thus, a skilled person could easily check if the thickening system had a miscibility gap and which its critical temperature was by heating the solution and monitoring the temperature.

XI. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 27 as filed during the oral proceedings before the board.

Reasons for the Decision

1. The appeal is admissible.

2. Amendments - Article 123(2) EPC

2.1 Claim 1 as filed reads as follows:

"1. A foam-like preparation in the form of an emulsion comprising a continuous phase, a discontinuous phase, and a gas, wherein the continuous phase comprises a

thickening system being formed by the continuous phase and a thickening agent, and wherein the discontinuous phase comprises a structuring agent, wherein the thickening system has a miscibility gap with a lower critical temperature which is above the use temperature of the preparation."

2.2 Claim 1 as amended in the oral proceedings differs from the claim as filed in that

(i) it now relates to a foam-like cosmetic preparation;

(ii) in the form of an O/W emulsion;

(iii) the continuous phase now comprises a thickening system being formed by water or an aqueous medium and a thickening agent;

(iv) the proportion of the thickening agent in the thickening system is 0.5 to 5% by weight; and

(v) the lower critical temperature of the miscibility gap is between 35 and 80°C.

2.3 The limitation of the preparation to a cosmetic preparation in combination with the lower critical temperature of between 35 and 80°C for the thickening system is derivable from page 5, lines 13 to 16 of the application as filed. Thus, amendments (i) and (v) are clearly supported by the application as filed.

2.4 Amendment (iv) is based on claim 7 as filed ("A preparation according to one of the preceding claims,

wherein the proportion of the thickening agent in the thickening system is 0.5 to 5% by weight.")

2.5 Claim 1 as filed contains the wording that *"the continuous phase comprises a thickening system being formed by the continuous phase and a thickening agent".* It is immediately evident to the skilled reader that the term "continuous phase" has two different meanings in this wording, namely

(a) a broader meaning (in its first occurrence of the above wording) where it relates to the continuous phase as a whole, where the thickening system is only part of it, and where consequently other non-specified components may be present (eg a buffer system, preserving agents or colouring agents); and

(b) a narrower meaning (in its second occurrence of the wording) where it only relates to the solvent for the thickening agent (excluding other components), in other words, in this context the continuous phase is one part of the two-component system: the (pure) solvent plus the thickening agent.

In order to remove this inconsistency the feature has been amended and now reads as follows: *"wherein the continuous phase comprises a thickening system being formed by water or an aqueous medium and a thickening agent"*.

Apart from the fact that the above meanings (a) and (b) of the term "continuous phase" immediately come to the

mind of the skilled reader reading claim 1 as filed, the afore-mentioned amendment is also supported by the disclosure in the application as filed.

From the passage on page 5, lines 17 to 19: *"In a preferred embodiment the thickening system is present in the aqueous phase and comprises water or an aqueous medium such as water-alcohol mixture, and the thickening agent."* the skilled reader would firstly derive that the term "aqueous phase" (i.e. the continuous phase in an O/W emulsion) is used in its broader meaning (a) referred to above and, secondly, that the thickening system is a two-component system composed of water or an aqueous medium (i.e. the liquid itself) and the thickening agent.

At the same time, the passage on page 5, line 25 (*"For an O/W emulsion, the continuous phase is water or an aqueous medium"*) shows that the application as filed also uses the term "continuous phase" in its restricted meaning referring to the liquid itself (point (b) above).

Thus, amendment (iii) is clearly and unambiguously derivable from the application as filed for an O/W emulsion, which implies that amendment (ii) too is supported by the application as filed.

2.6 In summary, the above-mentioned amendments in claim 1 comply with Article 123(2) EPC.

2.7 The considerations in 2.3 to 2.5 also apply to the process claim 19 which now refers back to claim 1 as

regards the result of the process, ie the cosmetic preparation.

3. Clarity - Article 84 EPC

3.1 The above amendment has made it perfectly clear that the basis for the proportion of the thickening agent of from 0.5 to 5% by weight according to claim 1 is the thickening system, which is exclusively composed of the thickening agent and water or the aqueous medium.

3.2 Further unclear terms (viscosity without temperature/method of measurement; the terms short-chain and long-chain) have been removed by deleting claims 2, 5 and 12 as filed.

3.3 The new set of claims is therefore clear and meets the requirements of Article 84 EPC.

4. Sufficiency of disclosure - Article 83 EPC

4.1 It is uncontested that a skilled person is able to prepare a continuous phase and a discontinuous phase separately and can mix both phases for preparing an emulsion, e.g. with the aid of an emulsifier, if necessary. This is common general knowledge.

4.2 In the present case, one ingredient of the claimed O/W emulsion is a continuous phase comprising a thickening system formed by water or an aqueous medium and a thickening agent, this thickening system having a miscibility gap with a lower critical temperature between 35 and 80°C. It is immediately evident to a skilled person that the lower critical temperature to

be determined is that of the two-component mixture, ie the thickening system, and not that of the complete emulsion. Once the critical temperature has been determined the skilled person is also able to heat the continuous and the discontinuous phase above this predetermined temperature and mixing the two phases, optionally in the presence of an emulsifier, thereby making the claimed emulsion.

The term "miscibility gap" in conjunction with "lower critical temperature" is explained in the application as filed in the paragraph bridging pages 3 and 4. Accordingly, a miscibility gap with a lower critical temperature is a phenomenon where two components mix in a temperature range which lies below a certain critical temperature and form two phases in a temperature range above that temperature (the "lower critical temperature"). It also clearly emerges from that passage that, for the purposes of the present invention, the terms "miscibility gap" and "lower critical temperature" exclusively relate to the thickening system as part of the continuous phase (and not the emulsion as a whole) and that the phase separation above the lower critical temperature consists in the precipitation of the thickening agent from the continuous phase. The skilled person therefore clearly understands the meaning of "miscibility gap" and "lower "critical temperature" for the purposes of the present invention.

With its letter dated 1 March 2012 the appellant has provided experiments demonstrating how the lower critical temperature of a thickening system composed of a cellulose derivative as thickening agent (Klucel MF)

and water can be easily determined. Accordingly a solution of 2% Klucel MF in water is placed in a beaker and slowly heated without stirring. The enclosed photos show that, at a temperature of about 40°C which is first reached at the bottom of the beaker, the clear transparent solution becomes clouded, caused by the precipitation of the thickening agent. This cloud point can be easily observed. The temperature at this point represents the lower critical temperature for the miscibility gap of the thickening system. In view of these experiments the board has no doubt that the lower critical temperature of the miscibility gap can be determined by a skilled person without undue burden.

4.3 In its decision the examining division argued that it was technically impossible for a skilled person to investigate an emulsion to determine the critical temperature of a thickening system contained in the emulsion (point 3.1 of the decision). However, as has been set out above, the question is not whether or not one can determine the critical temperature in the emulsion. Rather the decisive question is whether the skilled person can

- prepare a thickening system by mixing the thickening agent and water/the aqueous medium;
- determine the lower critical temperature of the miscibility gap of the thickening system by relatively simple experiments;
- prepare a continuous phase comprising the thickening system
- prepare a discontinuous phase including a structuring agent dependent on the desired purpose of the preparation; and finally

– mix all above components above the predetermined lower critical temperature, e.g. with the aid of an emulsifier

in order to arrive at the claimed O/W emulsion. This question clearly has to be answered in the affirmative.

In other words, the skilled person is able to prepare the foam-like preparation according to claim 1 without undue burden.

4.4 Although it might be true that it is not easy and might even be impossible to determine the miscibility gap of the thickening system afterwards, ie when it is already part of the whole emulsion as claimed. This problem, however, does not affect the question of sufficiency of disclosure because, as stated above, it does not prevent the skilled person from carrying out the above steps, the result of which is the claimed preparation.

Hence, it is redundant to deal with the examining division's objection in point 5.3 of its decision with respect to claim 9 of the old set of claims (now claim 7 in the current request) that it was unclear how a thickening system can have a miscibility gap, if an emulsifier is present in the emulsion (see point IV(c) above).

5. For the above reasons the subject-matter claimed in the set of claims as submitted in the oral proceedings of the board meets the requirements of Articles 83, 84 and 123(2) EPC.

6. Remittal

Novelty and inventive step were not an issue in the decision under appeal. The board therefore exercises its discretion under Article 111(1) EPC and remits the case to the examining division for examination of the now limited subject-matter under the aspects of novelty and inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the examining division for further prosecution on the basis of claims 1 to 27 as filed during the oral proceedings on 16 March 2012.

The Registrar The Chairman

G. Röhn W. Sieber