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**Datasheet for the decision
of 3 November 2006**

Case Number: T 0500/05 - 3.3.06

Application Number: 98946297.3

Publication Number: 1007618

IPC: C11D 9/22

Language of the proceedings: EN

Title of invention:
Soap bars

Applicant:
UNILEVER PLC. et al

Opponent:
-

Headword:
Emollient oil containing soap bar/UNILEVER

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (no): application of an alternative known mixing technique to a known process"

Decisions cited:
-

Catchword:
-



Case Number: T 0500/05 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 3 November 2006

Appellant:

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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 10 November 2004
refusing European application No. 98946297.3
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: P.-P. Bracke
Members: L. Li Voti
U. Tronser

Summary of Facts and Submissions

I. This appeal lies from the decision of the Examining Division to refuse European patent application no. 98 946 297.3, relating to a process for producing a soap bar.

II. In its decision, the Examining Division, referring to document (1): WO92/08444,

found that

- document (1) disclosed a process for preparing a soap bar including the step of admixing a silicone gum and fluid blend, i.e. a water-insoluble skin benefiting agent, with molten Carbowax 8000, i.e. a water-soluble carrier solid at ambient temperature, to form a mixture in the form of disperse silicone blend particles within a matrix of Carbowax 8000;

- therefore, the subject-matter of claim 1 of the then pending main request, relating to a process wherein the carrier had to be solid under ambient and process conditions, was novel over the process disclosed in document (1);

- however, since the soap bar obtained by the process disclosed in document (1) was not distinguishable from one obtained by the process of said claim 1, the subject-matter of claim 10 according to the same request, relating to a soap bar formed by said process, lacked novelty;

- since the process of claim 1 according to all the then pending auxiliary requests had been restricted to the use of specific water-soluble carriers different from Carbowax 8000, the subject-matter of the claims according to said requests was novel over the cited documents.

As regards inventive step the Examining Division found *inter alia* that

- document (1) disclosed the preparation of soap bars having the same properties as those of the present application;

- the process of the present application differed from that of document (1) *inter alia* insofar as it required a pre-mixing step with a carrier solid at ambient and process conditions;

- since the claimed process did not lead to any technical advantage over the teaching of document (1), the technical problem underlying the claimed invention amounted to the provision of an alternative pre-mixing step in a process of the type disclosed in document (1);

- since document (1) already disclosed a soft-solid mixing step during the agglomeration of the soap mass with the flakes containing the silicone/carrier combination and did not exclude the application of a soft-solid pre-mixing step too, the skilled person would have tried such a step as alternative to that specifically described in that document;

- the subject-matter of the claims according to the then pending auxiliary requests lacked thus an inventive step.

III. An appeal was filed against this decision by the Applicants (Appellants).

With the communication dated 9 March 2006 and with the annex to the summons to oral proceedings of 4 August 2006, the Board informed the Appellants of its provisional opinion that the claimed subject-matter appeared to lack an inventive step in the light of the teaching of document (1).

With letter of 11 October 2006, the Appellants withdrew their request for oral proceedings and requested a decision based on a newly amended set of 11 claims.

IV. The independent claim 1 of the set of claims filed by the Appellants with letter of 11 October 2006 reads as follows:

"1. A process for producing a soap bar of the type comprising soap and an emollient oil, the process comprising the steps of:

(a) pre-mixing a water-immiscible emollient oil with a solid water soluble carrier, in a first mixing step; wherein the emollient oil is essentially free of water to avoid dissolution of the carrier and the carrier exists as a solid at both ambient and process conditions so that the emollient oil is pre-blended into a matrix formed by the carrier such that a domain size of the emollient oil remains fixed and constant throughout the process;

(b) adding said pre-blended premix to a soap mix to form a final soap mix in a second mixing step; and
(c) finalizing the final soap mix to form a soap bar."

Dependent claims 2 to 11 relate to particular embodiments of the claimed process.

V. The Appellants submitted in writing *inter alia* that

- the claimed process differed from the process disclosed in document (1) insofar as the used carrier had to be solid at ambient and process conditions and the used water-insoluble emollient oil had to be free of water;
- the technical problem underlying the claimed invention could be defined as the provision of a more economical process of preparation of a soap bar containing a benefiting agent in a robust manner with a minimum change to existing manufacturing processes;
- the process of document (1), requiring the melting of the carrier, the dispersion of the silicone benefiting agent within the molten carrier to create an emulsion and a cooling step, required more energy and time than the process of the present application;
- moreover, the skilled person, following the teaching of document (1), would have been led away from using a water-soluble carrier solid under process conditions as in the present invention and would have rather used, as alternative carrier, the other water-insoluble components suggested in that document;

- moreover, the process of document (1) needed that the benefiting agent be incorporated into the carrier material for a short period of time in order to be dispersed within the cleansing bar composition and did not require that the benefiting agent remained entrapped within a solid matrix of the carrier material until the moment of use;

- consequently, the process of document (1) did not require that the benefiting agent be free of water;

- therefore, there was no reason for the skilled person to modify the process of document (1) in order to arrive at a process as claimed;

- the claimed subject-matter involved thus an inventive step.

VI. The Appellants request that the decision under appeal be set aside and that a patent be granted on the basis of the claims submitted with letter of 11 October 2006.

Reasons for the Decision

1. *Articles 84, 123(2) and 54 EPC*

The Board is satisfied that the claimed subject-matter complies with the requirements of Article 84 and 123(2) EPC and that the claimed subject-matter is novel over the cited prior art.

Since the appeal fails on other grounds no details are necessary.

2. *Inventive step*

2.1 Claim 1 relates to a process for producing a soap bar comprising an emollient oil as benefiting agent (page 1, lines 3 to 5 in combination with page 5, line 15).

As explained in the present application, the attempt of incorporating into soap bars additives capable of modifying the interaction of the product with the skin, such as emollient oils, had been accompanied with several drawbacks; for example, the soap mass became sticky and difficult to process, the obtained product had a sticky feel and a careful control of the oil droplet size with resulting reduced throughput was necessary. Therefore, a modification of the fat charge had been also rendered necessary in order to overcome some of the drawbacks mentioned above (see page 1, line 12 to 16 and page 1, line 33 to page 2, line 25).

The technical problem underlying the claimed invention is reported thus in the present application as the provision of a process for making soap bars which can deliver sensory benefits and overcomes the problems mentioned above, so that an emollient oil can be incorporated in a robust way into a soap bar with a minimized need for modification of existing manufacturing processes (see page 2, line 31 to page 3, line 22).

2.2 Both the Examining Division and the Appellants found that document (1) was the most suitable starting point for assessing the inventiveness of the claimed subject-matter.

The Board has no reason for departing from this finding.

Document (1) discloses a process for the preparation of a toilet soap bar comprising a silicone benefiting agent and which can comprise up to 90% by weight of soap, wherein an emollient oil, consisting of a blend of silicone gum and silicone fluid, i.e. a water-free water-immiscible emollient oil, is pre-mixed with a melted Carbowax 8000 (PEG-150) carrier, which is a water-soluble carrier solid at ambient temperature and at elevated temperatures of up to about 60°C; the mixture is cooled to form particles of the emollient oil within a matrix of the carrier, formed into flakes and added to the amalgamator containing the soap mixture; the amalgamated mixture is thereafter milled, plodded and stamped into bars. The silicone blend particles are released from the product during use (see page 5, lines 16 to 21; page 6, lines 14 to 23; page 9, lines 3 to 5 and lines 14 to 19; page 12, lines 8 to 13; page 20, lines 11 to 15, 25 to 27; page 20, line 34 to page 21, line 10; example VIII in combination with page 26, line 21 to 30 and page 27, lines 2 to 14).

The Board thus finds that the soap bar obtained in the process disclosed in document (1) contains necessarily homogeneously distributed particles of the silicone oil entrapped within the carrier, which particles thus are present as a fixed constant domain size throughout the process.

The only difference between the claimed process and that disclosed in document (1) thus consists in the pre-mixing of the emollient oil with a solid water-

soluble carrier which remains solid also under process conditions. In fact, document (1) suggests explicitly to melt the carrier before pre-mixing it with the emollient oil and to solidify thereafter the obtained mixture.

- 2.3 The toilet bars prepared in document (1) have improved durable skin feel, skin conditioning, rinsing, mildness and excellent lather performance without negative tactile attributes such as greasy, sticky, tacky or taut skin feel (see page 2, lines 7 to 15 in combination with page 3, lines 30 to 34 and page 4, line 33 to page 5, line 5). Moreover, they can be prepared by conventional techniques including crutching, drying, amalgamating, milling, plodding and stamping (page 20, lines 11 to 15).

Therefore, the Board finds that, because of the high quality of the product obtained by means of the process of document (1), the soap mass used in that document did not become sticky and difficult to process and the obtained product had not a sticky feel.

As the silicone benefiting agent was present in the form of particles within a matrix of the carrier, there was also no need of a careful control of the oil droplet size with resulting reduced throughput. Furthermore, there was no need for modification of the fat charge.

The process disclosed in document (1) had thus already dealt with and solved the same technical problem addressed to in the present application of providing a process for making soap bars which can deliver sensory benefits and able of incorporating in a robust way a

benefit agent such as an emollient oil with a minimized need for modification of existing manufacturing processes.

- 2.4 In the light of the teaching of document (1), the technical problem underlying the claimed invention has thus to be formulated as the provision of an alternative process of the same type of that of document (1) capable of providing toilet bars having similar characteristics.
- 2.5 The Board notes that document (1) did not require, as an essential step of the process for forming soap bars, that the carrier is liquid or liquefied before being pre-mixed with the silicone component or that the pre-mixing is carried out at elevated temperature or in a specific mixer suitable for mixing only liquid components.

Therefore, the skilled person could have selected for the pre-mixing step any suitable alternative mixing step which he would have considered apt to obtain particles of the emollient oil within a matrix of the carrier (see page 20, lines 25 to 26 in combination with page 21, lines 3 to 8).

Even though document (1) suggested also the alternative use of water-insoluble carriers, some of them being also liquid at ambient temperature, the most preferred one was the Carbowax 8000 used in the examples (see page 20, lines 27 to page 21, line 3). Therefore, there was no reason for the skilled person, looking for a modification of the process explicitly disclosed in document (1), to select less preferred carriers which,

moreover, could have been liquid at ambient temperature and thus no apt to form a mixture containing particles of the silicone benefiting agent within a matrix of the carrier.

Since, as found in the appealed decision (point 6.1 of the reasons for the decision) and not contested by the Appellants, the technique of soft-solid mixing steps was known to the skilled person at the priority date of the present application, it was obvious for the skilled person, looking for an alternative way of forming a mixture of silicone benefiting agent and Carbowax 8000, to try to mix them in an appropriate soft-solid mixer at a temperature lower than that used in the example of document (1), e.g. one in which the Carbowax 8000 was still in the solid state.

2.6 The Board thus concludes that it was obvious for the skilled person, in the light of the teaching of document (1), to try, alternatively, to use the carrier as a solid in the pre-mixing step with the expectation of obtaining a toilet soap bar having similar properties.

Therefore, the subject-matter of claim 1 lacks an inventive step.

2.7 Since the appeal fails on these grounds there is no need to discuss the dependent claims.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Rauh

P.-P. Bracke