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**Datasheet for the decision
of 26 April 2021**

Case Number: T 1872/17 - 3.3.07

Application Number: 08749457.1

Publication Number: 2164447

IPC: A61K8/04, A61K8/39, A61K8/44,
A61K8/81, A61Q1/10

Language of the proceedings: EN

Title of invention:
POLYMER-BASED PIGMENT-BEARING INK

Applicant:
Schwan-STABILO Cosmetics GmbH & Co. KG

Headword:
Pigment-bearing ink/SCHWAN-STABILO

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - unexpected improvement shown



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 1872/17 - 3.3.07

D E C I S I O N
of Technical Board of Appeal 3.3.07
of 26 April 2021

Appellant: Schwan-STABILO Cosmetics GmbH & Co. KG
(Applicant) Schwanweg 1
90562 Heroldsberg (DE)

Representative: Hoefler & Partner Patentanwälte mbB
Pilgersheimer Straße 20
81543 München (DE)

Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 3 February 2017
refusing European patent application No.
08749457.1 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman E. Duval
Members: M. Steendijk
P. Schmitz

Summary of Facts and Submissions

- I. The appeal was filed by the applicant (hereinafter: "the appellant") against the decision of the examining division to refuse the European patent application 08749457.1 (hereinafter: "the application"). The appealed decision was based on a main request filed on 24 February 2015 and auxiliary requests 1-3 filed on 10 October 2016.

Claim 1 of the main request read:

"A cosmetic water-based ink in form of a suspension containing at least one acryl-based polymer, at least one polymeric ionic thickener, at least one anionic or amphoteric-ionic surfactant, at least one material in particle form and at least one non-ionic surfactant, wherein the non-ionic surfactant is a compound which contains between 4 and 8 units of PEG or PPG and a C8-C16 fatty acid residue."

- II. The following documents were cited in the decision under appeal:

D1: EP 1 529 513 A

D2: FR 2 844 192 A

D3: WO 01/54660 A

D4: EP 1 077 062 A

D5: EP 1 462 084 A

D6: Submission of 15 February 2012, experimental data

D7a: Submission of 10 November 2016, experimental data

- III. According to the decision under appeal the main request was refused for the following reasons.

The cosmetic water-based ink in form of a suspension defined in claim 1 of the main request was interpreted not to exclude the presence of oils in the liquid phase. Therefore documents D1 and D5 were both considered relevant starting points in the prior art.

Starting from document D1 the technical problem was defined as providing alternative pigment compositions. The solution was obvious as the further ingredients defined in claim 1 were known for use in cosmetics, as evidenced by documents D2, D3 and D4.

The difference with the eye-liner product of example 3 of document D5 resided in i) the presence of anionic or amphoteric surfactants and ii) the nature of the non-ionic surfactant defined for the compositions of the main request. Also in view of document D5 the problem to be solved was seen in the provision of alternative pigment-containing compositions. As evidenced by document D1 anionic and amphoteric surfactants were common ingredients of cosmetic compositions. Moreover, document D1 also suggested the use of the non-ionic surfactants.

Hence the subject-matter of the main request did not involve an inventive step.

- IV. With the statement setting out the grounds of appeal the appellant submitted a main request and two auxiliary requests. This main request corresponded to the main request on which the decision under appeal was based.

- V. In its communication pursuant to Article 15(1) RPBA of 11 September 2020 the Board expressed *inter alia* its

preliminary opinion that in view of document D5 as closest prior art and having regard to surfactants suitable for use in cosmetic products mentioned in document D1 the subject-matter defined in accordance with the main request seemed obvious as solution to the problem of providing an alternative pigment dispersion.

- VI. With the submission of 15 December 2020 the appellant filed new auxiliary requests 1-3 and presented photographic evidence of results from comparative tests involving the composition of example 3 of document D5.
- VII. Oral proceedings were held in face-to-face mode on 26 April 2021. During the oral proceedings samples of the compositions used for the comparative tests mentioned in the letter of 15 December 2020 were presented.
- VIII. The appellant's arguments relevant to the present decision can be summarized as follows:

Document D5 described pigment dispersions including an anionic dispersing agent and a non-ionic dispersion agent. The document mentioned acryl-based polymers as example of anionic dispersing agents and the possible use of thickeners, but described polyaspartic acid as a more preferable anionic dispersing agent, because it lowered viscosity allowing advantageous high pigment concentrations in low viscosity compositions.

In view of this teaching example 2 of document D5, which was based on the preferred polyaspartic acid, represented the closest prior art. The claimed subject-matter differed from the composition of this example in the presence of the acryl-based polymer, the polymeric ionic thickener and the particular defined non-ionic

surfactant. Having regard to the preferred low viscosity, the skilled person had no motivation to replace the polyaspartic acid by an acryl-based polymer and to further include a thickener.

The composition of example 3 of document D5, which comprised an acryl-based polymer, still differed from the claimed composition in the presence of the polymeric ionic thickener and the particular defined non-ionic surfactant. The results of the comparative tests presented on page 8 (see diagram and picture) of the submission of 15 December 2020 indicated that the composition according to example 3 of document D5 ("Versuch 1") showed lower viscosity and lower homogeneity as well as higher propensity to pigment settlement associated with cake-formation in comparison with a similar composition which additionally included sodium polyacrylate as thickener ("Versuch 3"). Moreover, the results showed that the further replacement of the non-ionic surfactant of example 3 of document D5, polyoxyethylene laurylether (21 EO, HLB 19), by a non-ionic surfactant as defined in the claims, PEG-6 caprylic/Caprylic glycerides, allowed for improved color intensity, color density, color homogeneity and touch-up resistance (see pictures pages 10-12 of "Versuch 3" in comparison with "Versuch 4"). The demonstration of the tested samples during the oral proceedings held on 26 April 2021 confirmed the advantageous properties of the the composition of "Versuch 4" representing a composition covered by the claims. No prior art suggested the claimed subject-matter as solution to the problem providing compositions with such improved qualities.

IX. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis

of the set of claims of the main request filed with the statement setting out the grounds of appeal or on the basis of one of auxiliary requests 1-3 filed with the submission of 15 December 2020.

Reasons for the Decision

Main request

1. Claim 1 of the main request defines a cosmetic water-based ink in form of a suspension comprising:
 - an acryl-based polymer,
 - a polymeric ionic thickener,
 - an anionic or amphoteric-ionic surfactant,
 - a material in particle form and
 - a compound which contains between 4 and 8 units of PEG or PPG and a C8-C16 fatty acid residue as non-ionic surfactant.

Claim 1 of the main request takes up the features of claim 1 of the application as filed with further specification that the ink is in form of a suspension in line with page 5, lines 11-13, and page 6, lines 1-2, of the application as filed and that the non-ionic surfactant contains a C8-C16 fatty acid residue in line with page 8, lines 7-10, of the application as originally filed.

2. Inventive step
- 2.1 Closest prior art

The Board observes that the description of the application clearly states that the combination of

ingredients as defined for the suspension of claim 1 allows for dispensing with lipid-bearing systems and oil components, which overcomes known problems associated with emulsion type formulations, in particular migration, smearing and smudging (see page 5 lines 2-6 and page 3 lines 2-15). The examples of the application support this statement.

Documents D1-D4 relate to cosmetic compositions which require oils or waxes as components, whereas document D5 describes a pigment dispersion suitable for use in an aqueous type cosmetic, which does not require oils or waxes (see paragraph 13, examples and claim 5). The Board is therefore of the opinion, that document D5 represents the most realistic starting point in the prior art.

2.2 Differences with the closest prior art

The pigment dispersion described in document D5 contains a mixture of pigments, an anionic dispersing agent and a non-ionic dispersing agent (see paragraph 6 under (1) and (2)). The document mentions acryl-based polymers amongst examples of preferred anionic dispersing agents (see paragraphs 16-18), describes polyoxethylene type non-ionic surface agents as examples of the non-ionic dispersing agents (see paragraph 21) and further refers to ingredients that may generally be included in an aqueous cosmetic product, including thickeners such as sodium polyacrylate (see paragraphs 28 and 30).

Within document D5 example 3 may be considered to present the most relevant specific composition. The composition of example 3 comprises the triple combination of pigments, sodium polyaspartate,

alkylacrylate copolymer emulsion and polyoxyethylene laurylether.

Example 2 of document D5 does not present a more relevant composition, as the composition of example 2 additionally differs from the claimed subject-matter in that it does not comprise an acryl-based polymer. The mention in document D5 (see paragraph 20) of a preference for the use of polyaspartate, which reduces viscosity and allows for high pigment concentrations, does not affect this assessment. Document D5 explicitly states that the viscosity of the pigment compositions is not particularly limited and merely mentions advantages of low viscosity compositions for certain applications (see paragraph 33). Moreover, example 3 also comprises polyaspartate.

Document D5 does not disclose the particular non-ionic surfactant containing between 4 and 8 units of PEG or PPG and a C8-C16 fatty acid residue as defined in claim 1 of the main request.

2.3 Problem to be solved

With the submission of 15 December 2020 the appellant provided results of comparative tests involving a composition according to example 3 of document D5 ("Versuch 1"), a similar composition which differed in the additional presence of sodium polyacrylate as thickener ("Versuch 3") and a similar composition comprising the sodium polyacrylate as thickener and in which the polyoxyethylene laurylether (21 EO, HLB 19) of example 3 of document D5 is replaced by PEG-6 caprylic/Caprylic glycerides ("Versuch 4"). The composition of "Versuch 4" represents a composition as defined in the claims of the main request.

The results presented on page 8 (see diagram and photo) of the appellant's submission of 15 December 2020 indicate that the composition of "Versuch 1" shows lower viscosity and faster pigment settlement associated with cake-formation in comparison with a composition which additionally included sodium polyacrylate as thickener "Versuch 3".

The results of the comparative tests between the composition of "Versuch 3" and "Versuch 4", which involved drawing three lines of each of the compositions on the back of a hand without reloading the used applicator (see page 10 of the submission of 15 December 2020), further suggest a slightly increased fading tendency of the composition of "Versuch 3" in comparison with the composition of "Versuch 4".

Inspection of samples of the compositions used in these comparative tests during the oral proceedings held before the Board on 26 April 2021 confirmed that the composition of "Versuch 4" showed similar low pigment settlement as the composition of "Versuch 3" and that when drawing multiple lines on the back of a hand without reloading the used applicator the composition of "Versuch 3" showed a slightly increased fading tendency in comparison with the composition "Versuch 4".

In view of the presented evidence the Board is satisfied that the use of the particular non-ionic surfactant containing between 4 and 8 units of PEG or PPG and a C8-C16 fatty acid residue as defined in claim 1 of the main request is associated with the advantage of reduced fading upon application of a single loading. The problem to be solved may therefore be seen in the

provision of an cosmetic water-based ink in form of a suspension with such improved resistance to fading.

2.4 Assessment of the solution

The Board observes that document D5 refers to the use of polyoxyethylene type non-ionic surface agents as suitable non-ionic dispersing agents, but only exemplifies ethers of polyoxyethylene without mention of fatty acid esters (see D5 paragraph 21). In this context the skilled person may be aware from document D1 that ethoxylated fatty acids are non-ionic surfactants suitable for use in cosmetics. However, no prior art suggests that the use of a compound which contains between 4 and 8 units of PEG or PPG and a C8-C16 fatty acid residue as non-ionic surfactant allows for improved resistance to fading of the compositions as defined in the claims of the main request.

The Board therefore concludes that the subject-matter defined in the claims of the main request involves an inventive step (Article 56 EPC).

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 with the order to grant a patent on the basis of the set of claims of the main request filed with the statement setting out the grounds of appeal and a description to be adapted.

The Registrar:

The Chairman:



B. Atienza Vivancos

E. Duval

Decision electronically authenticated