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Datasheet for the decision of 31 October 2013

Case Number: T 2441/09 - 3.3.01

Application Number: 02022258.4

Publication Number: 1300448

IPC: C09D 5/02

Language of the proceedings: EN

Title of invention:
Vinyl acetate/ethylene emulsion stabilized with a phosphate surfactant

Patentee:
Celanese International Corporation

Opponent:
Akzo Nobel Coatings International N.V.

Headword:
Vinyl acetate/ethylene emulsion/CELANESE INTERNATIONAL CORP.

Relevant legal provisions:
EPC Art. 56

Keyword:
"All requests: inventive step (no) - alleged improvement - not shown - obvious solution"

Decisions cited:
T 0181/82

Catchword:
-

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Case Number: T 2441/09 - 3.3.01

D E C I S I O N
of the Technical Board of Appeal 3.3.01
of 31 October 2013

Appellant I: (Patent Proprietor)
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Decision under appeal: **Interlocutory decision of the Opposition Division of the European Patent Office posted 28 October 2009 concerning maintenance of European patent No. 1300448 in amended form.**

Composition of the Board:

Chairman: A. Lindner
Members: J.-B. Ousset
C.-P. Brandt

Summary of Facts and Submissions

I. Both the patentee (appellant I) and the opponent (appellant II) appealed the interlocutory decision of the opposition division maintaining European patent No. 1 300 448 in amended form.

II. The relevant prior art is as follows:

(1) Japanese Laid-Open No. 1982—1 53036 (JP57-153036A) and its English translation.
(3) US—A—5201948

III. The opposition division found that the subject-matter of the then pending main and first auxiliary requests was not novel vis-à-vis document (1). Auxiliary request 2 contravened Article 123(2) and Rule 80 EPC. Auxiliary request 3 was considered novel over the prior art, and the presence of an improved scrub resistance for the claimed coating compositions was considered as inventive.

IV. With its statement setting out the grounds of appeal, appellant I filed a main and three auxiliary requests. The main request corresponds to the first auxiliary request filed with letter of 17 August 2009, the first auxiliary request corresponds to the second auxiliary request filed with letter of 6 October 2009, the second auxiliary request is a new request and the third auxiliary request corresponds to the third auxiliary request found patentable by the opposition division.

Claim 1 of the main request reads as follows:

"1. An aqueous vinyl acetate-ethylene polymer dispersion comprising:

a) a polymer formed from monomers comprising ethylene and vinyl acetate;

b) at least one phosphate-functional surfactant;

c) at least one protective colloid; and

d) water, wherein said protective colloid is hydroxyalkyl cellulose, polyvinyl alcohol, or a mixture thereof."

Claim 1 of the first auxiliary request reads as follows:

"1. An aqueous vinyl acetate-ethylene polymer dispersion comprising:

a) a polymer formed from ethylene, vinyl acetate and optionally other ethylenically unsaturated monomers;

b) at least one phosphate-functional surfactant;

c) at least one protective colloid; and

d) water, wherein the amount of the other ethylenically unsaturated monomers is less than 15 percent by weight of the total amount monomer, and wherein said protective colloid is hydroxyalkyl cellulose, polyvinyl alcohol, or a mixture thereof."

Claim 1 of the second auxiliary request differs from claim 1 of the main request only in that the protective colloid was limited to hydroxyethyl cellulose.

Claim 1 of the third auxiliary request reads as follows:

"1. An aqueous coating composition comprising:

a) 80 to 90 percent by volume of pigment, on a dry solids volume basis;
b) up to 25 percent by weight of a copolymer binder, comprising

1) a copolymer is formed from ethylene and vinyl acetate monomer, and optionally other ethylenically unsaturated monomers,
2) a phosphate surfactant; and
3) 0.1 to 6.0 percent by weight of a protective colloid, based on the amount of monomer."

V. Appellant I argued mainly as follows:

- Document (1) showed that the combination of a sulphate functional surfactant, a non-ionic surfactant and a protective colloid provided sufficient scrub resistance for paints with pigment volume content (PVC) ranging from 70% to 75%. In contrast, the aqueous coating compositions of claim 1 containing phosphate-functional surfactants and a protective colloid selected from hydroxyalkyl cellulose, polyvinyl alcohol, or a mixture thereof provided excellent scrub resistance also for 84% PVC paint formulations. This was not taught in document (1) wherein the compositions of Table 1 exhibited significantly lower scrub resistance if the PVC was increased from 70% to 75%.

VI. Appellant II argued mainly as follows:

- In view of the disclosure at the bottom of page 7 of document (l), namely that a coating film with a PVC value of 75% could endure 500 washes, it could be inferred that PVCs greater than 75% were feasible.

- Table 2 of the patent in suit did not contain any mistakes as to the values given for the different average scrub resistance. In view of the listed values of the scrub resistance, the alleged technical effect was not obtained over the whole scope claimed.

VII. With a letter of 16 August 2010, appellant I withdrew its request for oral proceedings and requested a decision in writing based on its previous arguments.

VIII. In a communication of 19 December 2011, the board expressed its preliminary opinion that in the absence of any improved effect for the claimed compositions, these could be considered as obvious in view of prior-art document (1).

IX. Appellant I requested that the interlocutory decision of the opposition division of 28 October 2009 be set aside and that the present patent be maintained according to the main request or, alternatively, according to one of auxiliary requests 1 to 3, in that order.

X. Appellant II requested that the interlocutory decision of the opposition division of 28 October 2009 be set aside and that the patent be revoked in its entirety.

Reasons for the Decision

1. The appeal is admissible.

In view of the outcome of these appeal proceedings on the question of inventive step (see points 2 to 5 below), it is not necessary to discuss the formal admissibility (Article 123 and 84 EPC) and novelty of the main request and of auxiliary requests 1 to 3.

2. Inventive step - main request

2.1 Closest prior art

Document (1) describes ethylene-vinyl acetate copolymer emulsions having an excellent miscibility with pigments (see page 2, first full paragraph). These emulsions are used in paints (i.e. coating compositions) (see page 2, first sentence of the second full paragraph). Furthermore, the method of production described on page 5, second paragraph shows that water is used to make the claimed polymeric composition. Example 5 of document (1) (Table 1 on page 9), which has to be read in conjunction with example 1 on page 7, describes a composition in which water (page 7, see line 7), a polymer formed from ethylene and vinyl acetate (see page 7, lines 8 to 16), a pigment (see page 7, line 21), and hydroxyethyl cellulose (see Table 1 on page 9, example 5) are present. Furthermore, a

water-soluble protective colloid is also contained in the composition described in example 1 (see page 7, lines 3 to 6). The amount and the nature of this colloid can be taken from Table 1 on page 9 (see more particularly Example 5 in which the colloid is hydroxyethyl cellulose (thus a hydroxyalkyl cellulose as mentioned on page 4, middle of the second full paragraph) in an amount of 3 wt%).

Hence, the claimed subject-matter differs from the compositions disclosed in document (1) only in that the phosphate surfactant is not mentioned in example 5 of document (1).

2.2 Problem

The problem underlying the patent in suit can be seen as the provision of an emulsion having improved scrub resistance in a high PVC (pigment volume concentration) aqueous coating composition (see [0008] of the patent in suit).

2.3 Solution

The solution proposed by the patent in suit is represented by the emulsions of claim 1.

2.3.1 The board is of the opinion that the argument of appellant I (see point V above) is not convincing for the following reasons:

It is based on the results of examples 2 and 3 of the patent in suit, in which coating compositions using 84% PVC paint formulations are described and have excellent

scrub resistance. Both examples 2 and 3 of the patent in suit differ from example 5 of the closest prior-art document (1) not only by the presence of the distinguishing feature but also by other features. These examples of the patent in suit contain compounds such as a biocide, potassium hydroxide and titanium oxide which are not present in the compositions described in document (1) (see Table 1). Hence, examples 2 and 3 according to the patent in suit do not represent the structurally closest approximation of example 5 of Table 1 of the closest prior-art document (1).

According to board of appeal case law, if comparative data are used to show the presence of an improved effect, the nature of the comparison with the closest prior art must be such that the alleged effect originates in the distinguishing feature of the claimed invention compared to the closest prior art. In view of the numerous differences between examples 2 and 3 of the patent in suit and Example 5 in Table 1 of document (1), it has not been shown that the alleged improved scrub resistance is due to the distinguishing feature between the claimed subject-matter and the emulsions of document (1) (see T 181/82, OJ EPO 1984, 401).

2.3.2 Appellant I submitted, in its statement setting out the grounds of appeal, that document (1) does not disclose the specific combination containing an ethylene/vinyl acetate copolymer, a phosphate functional surfactant and a protective colloid which confers excellent scrub resistance for 84 %PVC paint formulations.

As explained above, this alleged excellent scrub resistance has not been demonstrated by appellant I. As a result, the problem underlying the patent in suit has not been credibly solved. Moreover, the scrub resistance values given in Table 2 of the patent in suit for comparative examples 3A and 3C (respectively 150 and 75) are better than the one example 3F (35) according to the invention. This also casts serious doubts on the presence of the alleged better scrub resistance over the whole scope claimed.

2.3.3 In consequence, the problem defined in point 2.2 above has not been solved and has to be reformulated as the provision of alternative emulsions to be used in paints.

2.3.4 The results summarised in Table 2 of the patent in suit show that this problem has been solved by the claimed compositions.

However, the proposed solution cannot be considered as inventive for the following reason:

The disclosure of document (1) is not limited to the values given in the examples. Knowing from the disclosure of document (1) that the ethylene-vinyl acetate copolymer emulsion has a good miscibility with pigments (see page 2, lines 4 to 5 and last two lines of the last paragraph) without impairing the properties of the polymeric emulsion, and being aware that the anionic surfactant present in example 5, namely sodium dodecylbenzenesulfonate, can be replaced by another surfactant listed on page 4, line 4 to 14, including an alkali salt of phosphoric acid alkyl ester such as sodium diethylhexyl phosphate, the person skilled in

the art seeking to solve the problem defined in point 2.3.3 would replace the sodium dodecylbenzensulfonate by a phosphor-containing surfactant to arrive at the claimed invention.

2.4 An inventive step for the main request is thus not acknowledged.

3. Inventive step - first auxiliary request

3.1 Claim 1 of this request differs from claim 1 of the main request only in that the "ethylenically unsaturated monomers" are only optionally added when forming the polymer. Being optional, they cannot be considered a distinguishing feature.

3.1.1 The polymer according to claim 1a) of the first auxiliary request is predominately (>85%) or entirely composed of ethylene and vinyl acetate. However, in view of the fact that the compositions of document (1) comprise polymers consisting of ethylene and vinyl acetate (see point 2.1 above), the same reasoning as for the main request is applicable (see point 2.3.4), with the consequence that the claimed subject-matter is not inventive.

4. Inventive step - second auxiliary request

4.1 As explained above (see point IV), claim 1 of this request differs from the subject-matter of the main request in that the colloid has been limited to hydroxyethyl cellulose.

4.1.1 Limiting the protective colloid to a colloid already mentioned in document (1) does not render the claimed matter inventive. The reasoning of point 2.3.4 is also applicable to this request, with the consequence that this request does not fulfil the requirement of Article 56 EPC.

5. Inventive step - third auxiliary request

5.1 The subject-matter of claim 1 of the third auxiliary request differs from claim 1 of the main request in that the amounts of copolymer binder and protective colloid in the coating compositions have now been introduced and in that a specific percentage of pigment has been added into the coating composition.

5.1.1 In the absence of any meaningful comparative data, the problem underlying the patent in suit can only be seen as the provision of alternative coating compositions to be used in paints.

5.1.2 In the compositions described in document (1), the amount of the copolymer ethylene/vinyl acetate is not limited and the amount of protective colloid ranges from 0.3 to 4 wt% (see claim 1 on page 1 of document 1), thus overlapping with the range mentioned in claim 1 of this request. Moreover, the amount of pigment to be added to the emulsions of document (1) is also not limited to any specific value. Therefore, the skilled person, being aware of the disclosure of document (1), would vary the amount of these different constituents to arrive at the claimed coating compositions without any inventive skill. Furthermore, in view of the disclosure of document (3), for the person skilled in

the art, selecting the appropriate proportions of the different constituents would be a trade-off between the paint's expected improved scrub resistance and reduced hiding ability when the PVC is decreased (see document (3), column 2, lines 3 to 18).

5.2 The third auxiliary request therefore lacks inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar The Chairman

M. Schalow A. Lindner