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D E C I S I O N
of 1 June 2005

Case Number: T 0532/00 - 3.3.9

Application Number: 87311293.2

Publication Number: 0273680

IPC: B32B 27/32

Language of the proceedings: EN

Title of invention:
Sealable plastics film laminate

Patentee:
EXXONMOBIL OIL CORPORATION

Opponent:
Treofan Germany GmbH & Co. KG

Headword:

-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (main and auxiliary requests 1 to 3) - No"
"Reformulation of problem - No"

Decisions cited:
T 0440/91, T 0386/89

Catchword:

-



Case Number: T 0532/00 - 3.3.9

D E C I S I O N
of the Technical Board of Appeal 3.3.9
of 1 June 2005

Appellant: EXXONMOBIL OIL CORPORATION
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 28 March 2000
revoking European patent No. 0273680 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: P. Kitzmantel
Members: J. Jardon Alvarez
M.-B. Tardo-Dino

Summary of Facts and Submissions

I. The grant of European patent No. 0 273 680 in respect of European patent application No. 87311293.2 in the name of Mobil Oil Corporation (now ExxonMobil Oil Corporation), which had been filed on 22 December 1987, was announced on 23 April 1997 (Bulletin 1997/17) on the basis of 12 claims. Claim 1 read as follows:

"1. A heat-sealable, multi-layer, oriented plastics film structure which comprises:

- (a) a core layer comprising a crystalline polyolefin, which includes an antistatic additive, both surfaces of which layer are coated, directly or indirectly, with
- (b) at least one heat-sealable layer comprising a polyolefin which is a random copolymer and/or terpolymer and an antiblocking agent wherein only one of the external layers (b) contains silicone oil, part of this silicone oil being transferable to the exposed surface of the other external layer following contact of their surfaces in service, and characterized in that the antistatic additive of core layer (a) comprises a glyceride."

II. Notice of Opposition requesting revocation of the patent in its entirety on the grounds of Article 100(a) EPC, because the subject-matter of the claims lacked inventive step, was filed by Hoechst Trespaphan GmbH (now Treofan Germany GmbH & Co. KG) on 17 January 1998.

The opposition was supported by the following documents:

D1: EP-A-0 194 588,

D2: US-A-4 618 527,

D3: GB-A-1 221 714,

D4: US-A-4 419 410,

D5: Technical Data Sheet of Polybatch® ASPA 2446,
dated 18 July 1985 and

D6: Affidavit of Rene H. Doyen dated 20 November 1985.

III. By its decision announced orally on 14 March 2000 and issued in writing on 28 March 2000, the Opposition Division revoked the patent for lack of inventive step over D1 in combination with D2-D4. The decision of the Opposition Division was based on a main and three auxiliary requests submitted on 14 February 2000.

Claim 1 of each request read as follows:

Main Request:

"1. A heat-sealable, multi-layer, oriented plastics film structure which comprises:

- (a) a core layer comprising a crystalline polyolefin, which includes an antistatic additive, both surfaces of which layer are coated, directly or indirectly, with
- (b) at least one heat-sealable layer comprising a polyolefin which is a random copolymer and/or

terpolymer and an antiblocking agent wherein only one of the external layers (b) contains silicone oil, part of this silicone oil being transferable to the exposed surface of the other external layer following contact of their surfaces in service, and characterized in that the antistatic additive of core layer (a) comprises a glyceride and an amine".

First Auxiliary Request:

"1. A heat-sealable, multi-layer, oriented plastics film structure which comprises:

- (a) a core layer comprising a crystalline polyolefin, which includes an antistatic additive, both surfaces of which layer are coated, directly or indirectly, with
- (b) at least one heat-sealable layer comprising a polyolefin which is a random copolymer and/or terpolymer and an antiblocking agent wherein only one of the external layers (b) contains silicone oil, part of this silicone oil being transferable to the exposed surface of the other external layer following contact of their surfaces in service, and characterized in that the antistatic additive of core layer (a) comprises a glyceride and a tertiary amine".

Second Auxiliary Request

"1. A heat-sealable, multi-layer, oriented plastics film structure which comprises:

- (a) a core layer comprising a crystalline polyolefin, which includes an antistatic additive, both

surfaces of which layer are coated, directly or indirectly, with

- (b) at least one heat-sealable layer comprising a polyolefin which is a random copolymer and/or terpolymer and an antiblocking agent wherein only one of the external layers (b) contains silicone oil, part of this silicone oil being transferable to the exposed surface of the other external layer following contact of their surfaces in service, and characterized in that the antistatic additive of core layer (a) comprises glyceryl monostearate and a tertiary amine."

Third Auxiliary Request

"1. Use of a glyceride and an amine as an antistatic additive for reducing dust pick-up in a heat-sealable, multi-layer, oriented plastics film structure which comprises:

- (a) a core layer comprising a crystalline polyolefin, which includes the antistatic additive, both surfaces of which layer are coated, directly or indirectly, with
- (b) at least one heat-sealable layer comprising a polyolefin which is a random copolymer and/or terpolymer and an antiblocking agent wherein only one of the external layers (b) contains silicone oil, part of this silicone oil being transferable to the exposed surface of the other external layer following contact of their surfaces in service."

In the opinion of the Opposition Division, the films of the patent in suit were distinguished from those of D1, the closest prior art, in that:

- the antistatic additive must comprise a glyceride and an amine;
- said antistatic was present in the core layer;
- an antiblocking agent was present;
- in at least one of the skin layers.

These differences addressed two separate problems, the reduction of the electrostatic charge density on the surface of the skin layers and a reduction of the friction.

The Opposition Division held:

- (i) that the introduction of an antistatic agent comprising a glyceride and an amine into the core layer was obvious to the man skilled in the art over D1 in combination with D2/D3, which disclose the synergy of the combination of glyceride/tertiary amine in respect to the electrostatic charge density of a film surface and the efficiency of said combination when introduced into the core layer of a laminate, and
- (ii) that the incorporation of inorganic antiblocking agents in the skin layers, and its resulting advantages, were taught by D2.

Thus, the differences in the films of the patent in suit over the films according to D1 did not involve an inventive contribution over the prior art.

The same arguments applied for the subject-matter of the auxiliary requests, which were therefore also lacking inventive step.

IV. On 26 May 2000 the Patent Proprietor (Appellant) lodged an appeal against the decision of the Opposition Division and paid the appeal fee on the same day.

In the Statement of Grounds of Appeal filed on 4 August 2000, the Appellant stated that the subject-matter of the claims of the main request involved an inventive step.

The Appellant's arguments were filed in writing with the Grounds of Appeal. They may be summarised as follows:

- The Opposition Division made two fundamental errors in its consideration of the prior art citations. First, the Division read D1 with hindsight and made an extremely narrow selection out of its numerous teachings and then combined this selection with other references, on the assumption that gross antistatic effects and gross dust pick-up effects were the problem to be solved by the invention.
- It argued that there was no specific disclosure in D1 of the combination of layers and additives which were used in the films of the invention. D1 was a shotgun disclosure of the broad concept of multilayer materials wherein polysiloxane is transferred from one sealing layer to the other and merely disclosed the generality that it was

possible for any of the layers to include any appropriate additive. It was, therefore, an inappropriate starting point.

- The present invention was concerned with the particular problem of achieving optimum performance as regards the microdistribution of antistatic effects and therefore dust in plastic films.

The claimed combination of tertiary amine antistatic material in the core layer with antiblocking agent in the outer layers was a selection out of 375 possible combinations covered by D1 and in its opinion no-one starting from D1 would find it obvious to think in terms of having antiblocking agent in both core layers of a relevant multilayer film with silicone transfer, and simultaneously to put a tertiary amine antistatic agent into the core to improve the microeffect of dust retention and antistatic performance which were achieved by the invention.

- Moreover D2, D3 and D4 were specific patent disclosures and there was no reason why the skilled person would look at these disclosures. In particular, the synergy between a glyceride and an amine did not belong to common general knowledge and the skilled person when trying to develop the films of D1 would not combine the teaching of D1 with D2-D4 in order to solve the problem posed by the invention.

- V. The Respondent (Opponent) presented its counterstatement in a written submission dated 26 February 2001. The Respondent's arguments can be summarized as follows:
- Document D1 represented the closest state of the art, as it aimed at the same problem as in the patent in suit and disclosed structurally very close films. In fact, there was only one difference between the disclosure of the patent and that of D1 (the use of a glyceride according to Claim 1 of the patent) which justified the novelty of the claimed subject-matter.
 - D1 already disclosed the same polyolefin films and mentioned the use in the base layer or the sealing layers of antiblocking agents and antistatic additives (page 11, lines 11-21). The subject-matter of the claimed patent was obvious having regard to the disclosure of D1 in combination with D2 to D4 as correctly pointed out in a convincing way in the decision of the Opposition Division.
- VI. On 24 February 2005 the Board dispatched the summons to attend oral proceedings on 1 June 2005 and, with the annexed communication pursuant to Article 11(1) of the Rules of Procedure of the Boards of Appeal, drew the attention of the parties to the points to be discussed during the oral proceedings.
- VII. By letter dated 6 April 2005, the Respondent informed the Board of the withdrawal of its request for oral proceedings, of its intention not to attend the oral proceedings and of the maintenance of its request.

The Appellant, in a submission dated 29 April 2005 informed the Board that it would not attend the oral proceedings and requested that a decision be made based on the written submissions.

VIII. Oral proceedings before the Board were held on 1 June 2005 in the absence of the parties.

IX. The Appellant requested in its Notice of Appeal that the decision be set aside and that the patent be maintained on the basis of the main request or "on the basis of an auxiliary request", which was interpreted by the Board to mean "or on the basis of any one of the auxiliary requests 1 to 3 as filed on 14 February 2000 during the opposition proceedings".

The Respondent requested in its written submission that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

Main Request

2. *Amendments (Article 123 EPC)*

2.1 Amended Claim 1 is based on Claim 1 as granted with the addition of the presence of an amine as a component of the antistatic additive in accordance with the preferred embodiment disclosed on page 2, line 25 of

the application as originally filed (page 2, line 41 of the granted patent).

2.2 Moreover the mandatory presence of the amine restricts the scope of the claims.

2.3 Therefore, the Board finds that the subject-matter of the claims of the main request meets the requirements of Article 123(2) and (3) EPC.

3. *Inventive step (Article 56 EPC)*

3.1 The patent in suit concerns a sealable plastic film laminate. Claim 1 is directed to a heat sealable, multi-layer, oriented plastics film structure comprising a core layer comprising a crystalline polyolefin, including as antistatic additives a glyceride and an amine, said core layer coated at both surfaces with at least one heat-sealable layer comprising a polyolefin and an antiblocking agent, wherein only one of the external layers contains silicone oil, part of this silicone oil being transferable to the exposed surface of the other external layer following contact of their surface in service.

3.2 Closest prior art

3.2.1 The Boards agrees with the finding in the decision under appeal that D1 represents the closest state of the art.

3.2.2 D1 discloses in Claim 1 a three-layer biaxially oriented polyolefin film, in which the core layer is

composed of propylene polymers, preferably of (crystalline) isotactic polypropylene (see page 6, line 2), and the two sealing (external) layers are essentially composed of sealable olefin polymers, having in a sealing layer incorporated a polydialkylsiloxane (a silicone oil), which is transferred to the other sealing layer by contact between the two sealing layers. The films of D1 are said to be suitable for use as packaging film on high-speed packaging machines as they can be sealed on both sides, have high scratch-resistance, good running properties and good printability (see examples; see also page 13, lines 18-26).

Although the examples in D1 do not include the use of additives, it is within the scope of D1 to include in the base layer or in the sealing layers certain additives, such as antistatic agents, antiblocking agents, etc. in order to improve certain properties of the film (see paragraph bridging pages 7-8).

Thus, the films of Claim 1 of the patent differ from the disclosure of D1 in two aspects:

- (i) Firstly, by the use as antistatic additive of a mixture of a glyceride and an amine in the core layer, and
- (ii) secondly, by including an antiblocking additive in the external layers.

3.2.3 The Appellant's statements that D1 represents merely a shotgun disclosure of the broad concept of multilayer materials wherein polysiloxane is transferred from one

sealing layer to the other, and that no-one would use D1 as starting document, are not convincing. The closest prior art for the purpose of objectively assessing inventive step is generally that which corresponds to a similar use with the minimum structural and functional modification.

In the present case, the patent in suit aims to provide film structures useful for high-speed packaging operations with still further improved properties (see page 2, lines 15-17). The claimed film structures in fact make use of the essential concept of the films disclosed on D1 and, additionally, specify some of the additives which according to D1 are only optional. Thus, D1 must be considered as the closest prior art document.

3.3 Problem to be solved

3.3.1 The technical problem underlying the patent vis-à-vis D1 can be seen as the provision of film structures with improved antistatic properties (being resistant to dust pick-up) and having a low coefficient of friction.

3.3.2 It has been alleged by the Appellant that the present invention is *inter alia* concerned with the particular problem of achieving optimum performance as regards micro-distribution of antistatic effects and therefore dust pick-up of the claimed films. During the first instance proceedings the Appellant pointed out that, while the overall dust pick-up could be the same, a visual assessment needs to be made to see whether its distribution is uniform or variable. The claimed films show an unexpectedly favourable dust pick-up pattern when assessed visually.

3.3.3 It is established case law that the specific problem set out in the description may be reformulated if a closer prior art document is subsequently cited (see Case Law of the Boards of Appeal, 4th Edition, Section I.D.4, especially I.D. 4.5, pages 108-109 and, for instance, decision T 440/91 of 22 March 1994, not published in OJ EPO; point 4 of the Reasons). However, a reformulation is not possible if the alleged technical effect subsequently invoked cannot be deduced by the skilled person from the application as filed in relation to the closest prior art (see decision T 386/89 of 24 March 1992, not published in OJ EPO; point 4.3 of the Reasons).

3.3.4 In the present case there is no disclosure or suggestion in the application as originally filed of any specific dust pick-up pattern. The description and the examples are totally silent about this alleged effect. A problem related to the achievement of this effect is thus not deducible from the application as originally filed and cannot be taken into account for the purpose of assessing the issue of inventive step.

3.4 Solution to the existing technical problem

The technical problem as defined on 3.3.1 above is solved by the heat-sealable multilayer films as specified in Claim 1.

In view of the results of example 4 and the comparative examples 1-3 and 5 in the patent, which show the advantageous properties of the films falling within the scope of Claim 1 when compared with closely related

films, the Board is satisfied that the above technical problem has been effectively solved by the claimed subject-matter.

3.5 Inventive step

3.5.1 It remains to be decided whether, in view of the available prior art documents, it would have been obvious for the skilled person to solve this technical problem by the means claimed, namely by using a glyceride and an amine as antistatic additives in the core layer and by using an antiblocking agent in the external layers.

3.5.2 Concerning the use of a glyceride and an amine as antistatic additives in the core layer, the Board makes the following observations:

D2 discloses a biaxially oriented multilayer polyolefin film structure including in the core layer a combination of two antistatic compounds, namely a tertiary amine component and a monoester of an aliphatic polyhydric alcohol such as glycerol (see Claim 1; column 3, lines 35-62 and example 3).

The combined use of both antistatic agents is said to have an antistatic effect greater (synergistic effect) than that resulting from an equivalent weight of the single compounds (see Claim 2 and column 3, lines 5-13). D2 also states that the antistatic agent is introduced into the core layer (column 3, lines 24-26).

It would therefore have been clear to the skilled person wishing to improve the antistatic properties of

the films of D1 that this could be done by using the combination of antistatic agents already disclosed in D2 in the core layer. It is evident that improving the antistatic properties of the film will also lead to improved processing efficiency, reduced packaging problems and minimised dust pick-up.

Thus, the incorporation of a glyceride and an amine into the core layer, so as to produce films with better antistatic properties which do not exhibit dust pick-up, does not constitute an inventive step because this result is the immediate consequence of the teaching of D2.

3.5.3 Concerning the use of an antiblocking agent in the external layer:

D2 also contemplates the use of an antiblocking agent, such as finely divided inorganic materials, in the external (skin) layer or layers in order to reduce the coefficient of friction (see column 4, lines 3-24 and examples).

Thus, the use of an antiblocking agent in order to obtain a film with a low coefficient of friction is already known from D2 and does not involve an inventive effect.

3.5.4 Consequently, the skilled person would arrive at the claimed subject-matter by applying the teaching of D2 to the films of D1. The subject-matter of Claim 1 of the main request therefore lacks an inventive step having regard to the combined teaching of these two documents (Article 52(1) and 56 EPC).

3.5.5 It was argued by the Appellant that the claimed subject-matter is a selection of one embodiment out of more than 375 embodiments covered by D1 and that there is no specific disclosure of the combination of layers and additives now claimed. It was further argued that D2-D4 were not common general knowledge and that there is no reason why the skilled person would have looked at these patents rather than the millions of other disclosures that are available.

These arguments are not relevant. A selection is regarded as inventive, *inter alia*, if it leads to an unexpected advantage within the selected range compared with the broad disclosure and, not merely because it is a choice from a large number of possibilities. Since in the present case an unexpected advantage does not exist, the Board cannot see any basis for an inventive selection based on the antistatic additives/antiblocking agent now used.

On the other hand the Appellant has not provided any convincing argument why the skilled person would not have used documents D2-D4, which relate to the same technical field when trying to improve the films of the patent.

3.6 Consequently, the main request is refused for non-compliance with the requirements of Article 56 EPC.

First and Second Auxiliary Requests

4. Claim 1 according to the first auxiliary request specifies that the amine is a tertiary amine (see page 2, line 26 of the application and page 2, line 41 of the patent specification) and Claim 1 of the second auxiliary request further specifies that the glyceride is glyceryl monostearate (see page 2, lines 17 of the application and page 2, line 24 of the patent specification).
- 4.1 Since D2, as discussed above, already discloses the use of a tertiary amine (column 3, line 35) and of glycerol monostearate (Claim 6) as preferred antistatic additives, the same reasoning as applies to Claim 1 of the main request applies to Claim 1 of these requests.
- 4.2 Therefore, the subject-matter of Claim 1 of the first and second auxiliary requests does not involve an inventive step in the sense of Article 56 EPC.

Third Auxiliary Request

5. The subject-matter of Claim 1 of the third auxiliary request is directed to the use of a glyceride and an amine as antistatic additives for reducing dust pick-up in a plastic film (see page 2, lines 25-27 of the application and page 2, lines 41-42 of the patent specification).
- 5.1 Again as stated above under point 3.5.2, the said use is already known from D2 and cannot justify the presence of an inventive step.

5.2 The subject-matter of Claim 1 of the third auxiliary request does not therefore involve an inventive step as required by Article 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Röhn

P. Kitzmantel