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**D E C I S I O N**  
**of 27 January 2004**

**Case Number:** T 0739/99 - 3.3.7

**Application Number:** 89904366.5

**Publication Number:** 0473573

**IPC:** B32B 3/26

**Language of the proceedings:** EN

**Title of invention:**  
Improved opaque film compositions

**Patentee:**  
MOBIL PLASTICS EUROPE, INC.

**Opponent:**  
Hoechst Aktiengesellschaft

**Headword:**

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**Relevant legal provisions:**  
EPC Art. 54

**Keyword:**  
"Novelty: (no) all requests"  
"Added functional features not distinguishing the claimed subject-matter from the prior art (first auxiliary request)"

**Decisions cited:**

-

**Catchword:**

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Case Number: T 0739/99 - 3.3.7

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.7  
of 27 January 2004

**Appellant:** Hoechst Aktiengesellschaft  
(Opponent) Patent- und Lizenzabteilung, Geb. K801  
D-65926 Frankfurt am Main (DE)

**Representative:** Luderschmidt, Schüler & Partner GbR  
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**Respondent:** MOBIL PLASTICS EUROPE, INC.  
(Proprietor of the patent) Zoning Industrielle DeLatour  
B-6761 Virton (BE)

**Representative:** Dew, Melvyn John  
ExxonMobil Chemical Europe Inc.  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 11 May 1999  
rejecting the opposition filed against European  
patent No. 0473573 pursuant to Article 102(2)  
EPC.

**Composition of the Board:**

**Chairman:** R. E. Teschemacher  
**Members:** P. A. Gryczka  
G. Santavicca

## Summary of Facts and Submissions

- I. The mention of the grant of European patent No. 0 473 573 in respect of European patent application No. 89 904 366.5, which is based on international application PCT/US89/00750 filed on 28 February 1989 and published under No. WO 89/08023, was published on 11 September 1996.
- II. A notice of opposition was filed on 10 June 1997 in which revocation of the patent in its entirety was requested on the grounds of lack of novelty and inventive step (Article 100(a) EPC).

The following documents were *inter alia* cited during the opposition proceedings:

D3: EP-A-0 155 595

D5: Hawley's Condensed Chemical Dictionary, Eleventh Edition, Van Nostrand Reinhold Company, New York, 1987, pages 219 and 576

- III. In a decision issued in writing on 11 May 1999, the Opposition Division rejected the opposition.

The Opposition Division held *inter alia* that:

- (a) The subject-matter of claim 1 was novel over the prior art described in D3, since that document did not disclose pigment particles with a lamellar morphology. In particular, the opponent had not demonstrated that graphite particles represented particles with a lamellar morphology within the

meaning of the opposed patent. It was generally recognised that the term "morphology" referred to the shape of an object rather than to the internal structure of a material. The wording of claim 1 made clear that it was the pigment particles which had to be of lamellar morphology. Instead it was apparent from D5 that graphite might be present in the form of powder, flake, crystals, rods, plates and fibres. The shape of graphite particles was therefore not necessarily lamellar.

- (b) The opponent had not demonstrated that the claimed invention lacked an inventive step. The subject-matter defined in claim 1 was more specific than the general teaching of D3. It appeared credible that selecting the light absorbing pigments as claimed contributed to the solution of providing a film with enhanced opacity. No reason could be seen why a skilled person would select the claimed pigments to solve that technical problem.

IV. The Opponent (Appellant) filed a notice of appeal against the above decision received on 19 July 1999, the appeal fee being paid on the same date. The statement setting out the grounds of appeal was filed on 21 September 1999.

In a letter dated 16 December 2003 filed in response to a communication of the Board annexed to the summons to attend oral proceedings, the Appellant referred to the further document:

D9: Römpf Chemie Lexikon, 10. Auflage, Georg Thieme Verlag, Stuttgart, New York, 1996, pages 1601, 1602, 3880 and 3881

- V. In their letters, dated 16 December 2003 and 23 December 2003 respectively, the Appellant and the Proprietor (Respondent) withdrew their requests for oral proceedings. The Board maintained however the scheduled oral proceedings which took place on 27 January 2004 in the absence of the parties (Rule 71(2) EPC).
- VI. The Appellant's arguments can be summarised as follows:
- (a) The opposed patent related to films containing void initiating particles and particles with a lamellar morphology. The prior art disclosed the same type of films containing graphite, carbon black or mica particles. These particles had a lamellar morphology, contrary to the findings of the Opposition Division.
  - (b) The Opposition Division had interpreted the term "morphology" as designating the external shape of the particles. However, the term "morphology" in itself was not unambiguous and could also designate the internal structure of the particles. The description nowhere precised that "morphology" only referred to the shape of the particles. Indeed it made a distinction between morphology and shape. Consequently, the term morphology described something different from the shape of the particles, namely the internal structure. In addition, it made no sense to use the term

"lamellar" for characterising the external form (shape) of particles. "Lamellar morphology" designated therefore the structure of the particles. Graphite, carbon black or mica particles unambiguously had such a structure. In particular, graphite had always a layered structure and thus a lamellar morphology.

- (c) This was confirmed by the opposed patent itself which mentioned mica and graphite as examples of particles with a lamellar morphology. The claimed subject-matter according to the main request was consequently not novel having regard to the films disclosed in D3.
- (d) As the auxiliary requests also related to the use of graphite in the void containing basis layer, they could, in view of the disclosure of D3, not be considered as novel.
- (e) Finally, the selection of lamellar pigments was not inventive since the skilled person was taught by D3 to incorporate such pigments in the films.

VII. In a letter dated 22 May 2000, the Respondent declared that he relied on his previous submissions during the opposition proceedings and on the reasons given by the Opposition Division.

VIII. The Appellant requested that the decision under appeal be set aside and that the patent be revoked.

The Respondent requested that the appeal be dismissed and the patent be maintained as granted or, in the

alternative, on the basis of the first or the second auxiliary request filed with the letter dated 26 March 1999.

IX. Claim 1 of the main request reads as follows:

"1. An opaque, biaxially oriented, polymeric film which comprises a matrix of (i) a thermoplastic polymeric material in which are dispersed (ii) void-initiating solid particles which are phase-distinct from the thermoplastic polymeric material of the matrix and about which particles are located opacifying voids and a minor amount of (iii) a light-absorbing pigment characterised in that the light-absorbing pigment comprises pigment particles of a lamellar morphology."

Claim 1 of the first auxiliary request reads as follows:

"1. An opaque, biaxially oriented, polymeric film **structure which comprises (a), a core layer and (b) at least one transparent skin layer adhering to the surface of the voided core layer comprising a thermoplastic polymeric material and being thick enough substantially to prevent the asperities of the core layer from being manifest, the light transmission of the structure being less than about 15%, and in which the core layer** comprises a matrix of (i) a thermoplastic polymeric material in which are dispersed (ii) void-initiating solid particles which are phase-distinct from the thermoplastic polymeric material of the matrix and about which particles are located opacifying voids and a minor amount of (iii) a light-absorbing pigment which comprises **graphite or mica** pigment particles of a lamellar morphology." (emphasis

added to the differences from claim 1 of the main request).

Claim 1 of the second auxiliary request read as follows:

"1. An opaque, biaxially oriented, polymeric film which comprises a matrix of (i) a thermoplastic polymeric material in which are dispersed (ii) void-initiating solid particles which are phase-distinct from the thermoplastic polymeric material of the matrix and about which particles are located opacifying voids and a minor amount of (iii) a light-absorbing pigment characterised in that the light-absorbing pigment comprises **graphite** pigment particles of a lamellar morphology." (emphasis added to the differences from claim 1 of the main request).

## **Reasons for the Decision**

1. The appeal is admissible.

### *Main request*

2. *Novelty*
  - 2.1 D3 discloses an opaque, glossy, biaxially oriented film comprising a support layer on a basis of polypropylene, in which solid particles having an average size of 0.2 to 20  $\mu\text{m}$ , preferably of 2 to 8  $\mu\text{m}$ , are present in an amount of between 2 to 25% by weight, in particular of 5 to 20% by weight, relative to the total weight of the film, and of sealable, outer top layers, whereby the density of the total film is inferior to the calculated



density corresponding to the sum of the densities of the individual components, characterized in that the support layer comprises a mixture of inorganic white solid particles and a heat-stable coloured substance, whereby the proportion of the coloured substance is 0.01 to 2% by weight, relative to the total weight of the film, and the density of the film is not more than 80% preferably 60 to 75%, of the calculated theoretical density (Claim 1).

The support layer in the film of D3 is made of polypropylene, which is also the preferred thermoplastic material of the base film according to the patent in suit (patent in suit: claim 14; page 2, lines 49 to 54).

The inorganic white solid particles introduced into the base film of D3 initiate voids when the film is stretched (page 3, lines 9 to 12). It has never been contested that these particles are phase distinct from the thermoplastic polymeric material, i.e. from the polypropylene layer.

The void initiating particles are added to the base film in form of a mixture with a heat stable coloured substance. Whereas the total amount of particles represents 7 to 15 weight% of the whole film (claim 5), the coloured substance represents only 0.01 to 2 weight% of said film (claim 1). Therefore, the amount of heat stable coloured substance in the film disclosed in D3 is lower than the amount of void initiating particles, as required by claim 1 of the patent in suit by the term "minor amount".

2.2 The sole issue which remains to be decided for the assessment of novelty of the claimed subject matter is consequently whether the heat stable coloured substances introduced into the films of D3 are pigment particles of a lamellar morphology as required by claim 1 of the patent in suit.

According to D3, the heat stable coloured substances are coloured compounds which are not degraded at the extrusion temperature of the film (page 3, lines 23 to 24). Carbon black particles (Russteilchen) are particularly preferred (page 3, line 30 to page 4, line 3; claim 3). The expression "Russteilchen" encompasses graphite particles (page 4, lines 4 and 5).

In the opposed patent the pigment particles of lamellar morphology may preferably comprise graphite (page 2, lines 35 to 36). The patent itself mentions "graphite" as a particularly preferred lamellar pigment (page 2, line 37). Therefore this coloured substance disclosed in D3 corresponds also to the preferred pigment particles envisaged in the patent in suit.

The Opposition Division and the Respondent took the position that graphite was not necessarily a pigment with a lamellar morphology, as the term "morphology" designated the shape of the particles. It is however well known to the skilled person and it has never been contested by the parties, that graphite presents a lamellar structure. This is confirmed by D5 and D9 which illustrate the common general knowledge and show that graphite has a layered crystalline structure (D5 and D9, drawings). In addition, the opposed patent makes no reference to any unusual type of graphite, nor

does it mention that the particles have to be selected from different types of graphite particles available to the skilled person. The argument that the term "morphology" in the opposed patent designates the external shape of the particles cannot be followed as this interpretation is not supported by the patent specification. The sole reference to a specific external shape is made in relation to the void-initiating solid particles which are preferably spherical (page 3, line 7). However, no reference to a specific external shape can be found in relation to the pigment of lamellar morphology. Under these circumstances, the graphite particles disclosed in D3 correspond to the graphite particles defined in claim 1 of the opposed patent.

- 2.3 The subject-matter of claim 1 of the main request is consequently not novel (Article 54 EPC).

*Second auxiliary request*

3. *Novelty*

The subject-matter of claim 1 of the second auxiliary request is restricted to a film in which the light absorbing pigment comprises **graphite** pigment particles of a lamellar morphology. This subject-matter is consequently not novel for the same reasons as the subject-matter of claim 1 of the main request (point 2).

*First auxiliary request*

4. *Novelty*

- 4.1 The subject-matter of claim 1 of the first auxiliary request defines a film structure in which the core layer (a) is not novel for the same reasons as claim 1 of the second auxiliary request (point 3). Novelty of the film structure could therefore only be acknowledged if the additional features defined in the claim were not disclosed in D3.
- 4.2 The first of these additional features requires that the film structure comprises at least one transparent skin layer adhering to the surface of the voided core layer, said skin layer comprising a thermoplastic polymeric material and being thick enough substantially to prevent the asperities of the core layer from being manifest.
- 4.2.1 The core layer of the film disclosed in D3 presents on one or on both of its surfaces a sealable, outer top layer made of an homopolymer of propylene, ethylene or butylene or a copolymer or terpolymer of these monomers, or mixtures of these polymers (claim 1; page 4, lines 12 to 20)). The film structure of D3 comprises therefore also skin layers made of thermoplastic materials adhering to the surface of the core layer.
- 4.2.2 D3 does not mention explicitly that the skin layers are transparent. However the main purpose of the invention underlying D3 is the preparation of a film showing metallic shining effects (page 2, lines 7 to 13). These effects are achieved by incorporating in the core layer specific particles and pigments (page 2, lines 19 to 26, claim 1). As these effects must also be visible when the core layer is covered by the outer skin layer, the skin layers must compulsorily be transparent.

- 4.3 The second additional feature is the thickness of the skin layer which is defined in claim 1 by a functional feature requiring that the skin layer is "thick enough substantially to prevent the asperities of the core layer from being manifest".
- 4.3.1 A value for the thickness of the skin layer, which should be observed to achieve this result is however not indicated in the claim. The sole indications given in this respect can be found in the description of the opposed patent which specifies that the thickness of the core represents preferably from 30 to 95% of the thickness of the structure (page 3, lines 17 to 19). According to D3, the whole structure has a thickness of from 15 to 60  $\mu\text{m}$ , preferably from 20 to 50  $\mu\text{m}$  whereby the outer layers have a thickness of from 0.2 to 2  $\mu\text{m}$  (claim 6). From these indications it can be calculated that, when the film has two outer layers, the core layer represents from 99.3% ( $60 - 2 \times 0.2 / 60$ ) to 66.6% ( $15 - 2 \times 2 / 15$ ) of the thickness of the whole structure. In terms of respective thickness of the layers, there is consequently an overlap with the thickness disclosed in D3.
- 4.3.2 Furthermore, the Respondent has not shown that the thicknesses of the outer layers of the films disclosed in D3 do not fulfil the functional requirement set out in claim 1. As the Respondent has introduced this feature into the claims of the opposed patent in response to the novelty attacks of the Appellant, the burden of proof that this feature distinguishes the claimed subject-matter from the prior art and thus overcomes the grounds for opposition lies with him.

4.3.3 In the absence of any evidence in this respect and in view of the overlap of the thickness ranges in D3 and in the opposed patent, this functional feature cannot distinguish the claimed films from those of D3.

4.4 The last additional feature is also a functional feature which requires that the light transmission of the structure is less than about 15%.

4.4.1 The light transmission of the films is not explicitly indicated in D3. The structural characteristics which can influence the light transmission of the film, such as the nature and thickness of the layers, the nature and amount of pigments and void initiating particles are the same in D3 and in the patent in suit (points 2 and 3). There is thus, *a priori*, no reason to assume that the light transmission mentioned in the present claim differs from that of the films disclosed in D3. In this respect, it should also be noted that the opposed patent itself mentions for a film without graphite a light transmission of 20.1% and the inclusion of approximately 1% graphite decreases the light transmission to values around 3% (table 1, page 3). It can thus be expected that the films of D3, including up to 2% of pigments (claim 1) will show a light transmission within the limits required by the opposed patent.

4.4.2 Furthermore, as for the previous functional feature introduced into the claim (point 4.3.2), the Respondent has not shown that the light transmission specified in the amended claim distinguishes the claimed films from those of D3.

- 4.5 The board considers consequently that the features introduced into claim 1 of the first auxiliary request do not offer any distinction over the films of D3, so that also the subject-matter of claim 1 of the first auxiliary request cannot be regarded as novel.
5. Consequently, the subject-matter of claim 1 of all requests is not novel with regard to D3 (Article 54 EPC).

## **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:

E. Eickhoff

R. E. Teschemacher