

**Internal distribution code:**

- (A)  Publication in OJ  
(B)  To Chairmen and Members  
(C)  To Chairmen  
(D)  No distribution

**D E C I S I O N**  
**of 24 May 2005**

**Case Number:** T 1271/01 - 3.3.3

**Application Number:** 94115151.6

**Publication Number:** 0645400

**IPC:** C08F 10/02

**Language of the proceedings:** EN

**Title of invention:**

Ethylene polymer and fuel tank comprising the same

**Patentee:**

Mitsubishi Chemical Corporation

**Opponent:**

Borealis A/S  
Basell Polyolefine GmbH

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 54(2)

**Keyword:**

"Novelty - public prior use (no) - insufficient evidence"

**Decisions cited:**

T 0194/86, T 0472/92

**Catchword:**

-



Case Number: T 1271/01 - 3.3.3

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.3  
of 24 May 2005

**Appellant 02:**  
(Opponent 02)

Basell Polyolefine GmbH  
Intellectual Property - F206  
D-67056 Ludwigshafen (DE)

**Representative:**

Hoffmann, Peter  
Basell Polyolefine GmbH  
Patentstelle  
Gebäude E 413  
Industriepark Höchst  
D-65926 Frankfurt am Main (DE)

**Respondent:**  
(Proprietor of the patent)

Mitsubishi Chemical Corporation  
33-8, Shiba 5-chome  
Minato-ku  
Tokyo 108-0014 (JP)

**Representative:**

VOSSIUS & PARTNER  
Siebertstrasse 4  
D-81634 München (DE)

**Other party:**  
(former Appellant 01;  
Opponent 01)

Borealis A/S  
Parallelvej 16  
DK-2800 Kongens Lyngby (DK)

**Representative:**

Stenbäck, Maria Elisabeth  
Awapatent AB  
P.O. Box 5117  
S-200 71 Malmö (SE)

**Decision under appeal:**

Decision of the Opposition Division of the  
European Patent Office dated 26 September 2001  
and posted 17 October 2001 rejecting the  
opposition filed against European patent  
No. 0645400 pursuant to Article 102(2) EPC.

**Composition of the Board:**

**Chairman:** R. Young  
**Members:** W. Sieber  
H. Preglau

## Summary of Facts and Submissions

I. The mention of the grant of European patent No. 0 645 400, in respect of European patent application No. 94 115 151.6, filed on 26 September 1994 and claiming JP priorities of 27 September 1993 (239986/93) and 29 September 1993 (242926/93 and 242927/93), was published on 1 April 1998 (Bulletin 1998/14). The granted patent contained 10 claims, whereby independent Claims 1 and 5 read as follows:

"1. An ethylene homopolymer or copolymer comprising ethylene and not more than 10% by weight of an  $\alpha$ -olefin having from 3 to 20 carbon atoms, said ethylene homopolymer or copolymer having (1) an intrinsic viscosity  $[\eta]$  of from 2 to 6 dl/g, (2) a density of from 0.945 to 0.970 g/cm<sup>3</sup>, (3) an R value of from 2.5 to 4, said R value being defined as a  $\sigma_2/\sigma_1$  ratio, wherein  $\sigma_1$  and  $\sigma_2$  mean stress in elongation with a strain at 2 sec and 4 sec, respectively, under a flow at an elongational strain rate  $\dot{\epsilon}$  of 0.5 sec<sup>-1</sup>, and (4) a relationship between high-velocity impact strength (HRI-IZOD) measured at -30°C and a melt index under a load of 21.6 kg (HLMI) satisfying formula:

$$\text{HRI-IZOD} \geq -\log\text{HLMI} + 1.15$$

5. A fuel tank obtainable by blow molding of an ethylene homopolymer or copolymer according to any of claims 1 to 4."

Claims 2 to 4 and 6 to 10 were dependent claims directed to elaborations of the polymer according to

Claim 1 and the fuel tank according to Claim 5, respectively.

II. Notices of opposition were filed by:

Borealis A/S (opponent 01) on 21 December 1998, and

Elenac GmbH, now Basell Polyolefine GmbH (opponent 02)  
on 29 December 1998.

The grounds of opposition raised were the grounds of Article 100(a) EPC, ie lack of novelty (*inter alia* public prior use in view of the two commercially available products Statoil H790 and Daplen<sup>®</sup>AH 5493) and lack of inventive step. The oppositions were supported - *inter alia* - by the following documents:

D1: EP-A-0 134 427;

D2: EP-B-0 273 284;

D3: US-A-4 058 647;

D7: Datasheet Daplen<sup>®</sup>AH 5493 (02/92);

D8: Request for test on Daplen<sup>®</sup>AH 5493 and test results;

D9: Test protocol on R value measurements of  
Daplen<sup>®</sup>AH 5493;

D11: Test report on HRI-IZOD measurements; and

D15: Sales data of Daplen<sup>®</sup>AH 5493 to Fustiplast S.p.A. and Plastinova Italiana S.p.A. filed by opponent 01 with letter dated 20 December 1999.

III. By a decision which was announced orally on 26 September 2001 and issued in writing on 17 October 2001, the opposition division rejected the oppositions.

According to the decision, the evidence provided by the opponents was not sufficient (not up to the hilt) to prove the allegation of public prior use in view of the two commercially available products Statoil H790 and Daplen<sup>®</sup>AH 5493. With respect to Daplen<sup>®</sup>AH 5493, it was held that it had not been demonstrated that such a product, sold before the priority date of the patent in suit, fulfilled all the parameters of Claim 1 of the patent in suit. In particular, it had not been shown that Daplen<sup>®</sup>AH 5493 had the required R value and the required relationship between high-velocity impact strength (HRI-IZOD) and melt index under a load of 21.6 kg (HLMI), ie requirement (4) of granted Claim 1. Furthermore, the opponents did not indicate when the Daplen<sup>®</sup>AH 5493 sample tested by BASF AG was made available to the public (point 2.2 of the decision). Since D1 to D3 did not disclose all the features of the invention, the claimed subject-matter was also novel over these documents.

Starting from Daplen<sup>®</sup>AH 5493 as the closest prior art, the technical problem to be solved had to be seen in improving uniform stretchability, fire resistance and impact resistance of Daplen<sup>®</sup>AH 5493. The proposed solution, namely an ethylene homopolymer or copolymer

as defined in Claim 1, was not obvious in the light of the teaching of the available prior art.

IV. Notices of appeal against the above decision were filed by opponent 01 (appellant 01) on 11 December 2001 and by opponent 02 (appellant 02) on 14 December 2001, the required fee being paid on the respective same day. The statements of grounds of appeal were filed on 14 February 2002 and 26 February 2002, respectively.

V. The arguments of appellant 01 presented in the statement of grounds of appeal and its further submissions dated 30 June 2003 and 21 April 2005 may be summarized as follows:

(a) Appellant 01 challenged the finding of the opposition division that the subject-matter of Claims 1 to 4 was novel over the public prior uses of Daplen<sup>®</sup>AH 5493 (one prior use of Daplen<sup>®</sup>AH 5493 by the company BASF AG and another prior use occurring with the sale of Daplen<sup>®</sup>AH 5493 to the companies Fustiplast S.p.A. and Platinova Italiana S.p.A.). Furthermore, it argued that the subject-matter of Claims 5 to 10 was not based on an inventive step.

(b) With regard to the prior use of Daplen<sup>®</sup>AH 5493 by BASF AG the decision of the opposition division was wrong and based on wrong assumptions. It had been established (i) that BASF AG had access to Daplen<sup>®</sup>AH 5493 on 5 April 1993, ie before the priority dates of the patent in suit; (ii) that Daplen<sup>®</sup>AH 5493 to which BASF AG had access satisfied all the requirements of Claim 1;

(iii) that there was no issue of confidentiality, because BASF was a member of the public. Even if the HRI-IZOD measurements were made on a Daplen<sup>®</sup>AH 5493 material produced in 1998, ie after the priority date of the patent in suit, this was no reason to reject the analytical data as inadmissible evidence. It had been demonstrated that Daplen<sup>®</sup>AH 5493 was manufactured during the period of January 1992 to December 1998 without any change, ie the composition and properties of Daplen<sup>®</sup>AH 5493 during that period were unchanged. Because the R value and the HRI-IZOD value depended on the polymer structure, ie on the composition of the polymer, they were unchanged if the composition of the polymer was unchanged. The circumstance that the composition was unchanged thus meant that all properties were unchanged, including the R value and the HRI-IZOD value.

- (c) As regards the prior use occurring with the sale of Daplen<sup>®</sup>AH 5493 to Fustiplast S.p.A. and Platinova Italiana S.p.A., it had been established (i) that Daplen<sup>®</sup>AH 5493 was delivered to these companies between 17 April 1992 and 19 February 1993, (ii) that Daplen<sup>®</sup>AH 5493 was manufactured during the period from January 1992 to December 1998 without any change, (iii) that there was no issue of confidentiality involved in the deliveries of Daplen<sup>®</sup>AH 5493 to these companies. Because the composition as well as the properties of Daplen<sup>®</sup>AH 5493 remained unchanged during that period, the material delivered to the companies Fustiplast S.p.A. and Platinova Italiana S.p.A. had the same properties as the material analysed

by BASF AG and, consequently, satisfied all the requirements of the polymer of Claim 1 of the patent in suit.

(d) Appellant 01 also filed the following further documents:

D17: Testimonial by R. Handstanger dated  
1 February 2002;

D18: Six graphs (Superposition 1-6);

D19: *H.P. Schreiber et al*, "Effect of Temperature on Molecular Weight Measurements in Polyethylene", *J. of Polymer Science: PAA TR* Vol. 2, pages 1655 to 1668 (1964);

D20: JIS K7110;

D21: English translation of JIS K7110; and

D22: ISO 180.

VI. Appellant 02 contested in the statement of grounds of appeal the finding of the opposition division that the opponents did not provide convincing evidence that a Daplen<sup>®</sup>AH 5493 material, available to the public before the priority date of the patent in suit, fulfilled all the parameters of Claim 1. To the contrary, it had been demonstrated by the tests in D9 and D11 that Daplen<sup>®</sup>AH 5493 had the parameters required in Claim 1 of the patent in suit. Furthermore, the Daplen<sup>®</sup>AH 5493 sample tested by BASF Ag was available to the public



before the priority date of the patent in suit, at the latest on 5 April 1993.

VII. The arguments of the proprietor (respondent) presented in the letters dated 11 March 2003 and 22 April 2005 may be summarized as follows:

- (a) The opponents did not demonstrate that a Daplen<sup>®</sup>AH 5493 material which had been available to the public before the priority date of the patent in suit fulfilled all the requirements of granted Claim 1. Not all analytical data were obtained from a sample which had been in the possession of BASF AG in April 1993. According to the information given by opponent 02 in the letter dated 6 January 2000, the HRI-IZOD measurements were carried out (a) on samples with a notch of 1 mm prepared from the original "old" sample (ie April 1993) and (b) on samples with a notch of 0.25 mm made from a "younger" material, ie produced after the priority date of the patent in suit. Since the instrument broke during the measurement of the samples with the 1 mm notch, opponent 02 relied in all further submissions on the HRI-IZOD value obtained on the samples (b), ie the samples prepared from the "younger" material.
  
- (b) As regards the argument that the properties of Daplen<sup>®</sup>AH 5493 did not differ with time, the respondent pointed to the fact that a "younger" material might not coincide with an "older" material, in particular because there was a difference in the R value determined by opponent 02 for the "old" sample (2.77) and the

value obtained by the proprietor for a "younger" sample (2.488).

(c) The respondent also filed an English translation of JIS K7110.

(d) Furthermore, auxiliary requests 1 to 5 were filed with the letter dated 22 April 2005. However, these auxiliary requests are not of importance for this decision and, consequently, they will not be considered in further detail.

VIII. In a communication, issued on 8 February 2005 and accompanying a summons to oral proceedings, the board indicated that the alleged prior use had to be assessed in accordance with the established jurisprudence of the boards of appeal, eg in accordance with T 194/86 of 17 May 1988 (not published in the OJ EPO; point 2 of the reasons). The board also pointed to the lack of information concerning the circumstances of the prior use associated with BASF AG.

IX. With the letter dated 21 April 2005, appellant 02 informed the board that it would not be represented at the oral proceedings but maintained its request that the decision under appeal be set aside and the patent be revoked in its entirety.

X. Appellant 01 withdrew its appeal with letter dated 10 May 2005.

XI. On 24 May 2005, oral proceedings were held before the board where only the respondent was represented although all parties had been duly summoned.

At these oral proceedings, the discussion focussed on the circumstances of the prior use of Daplen<sup>®</sup>AH 5493 by BASF AG. The respondent pointed out that the lack of information concerning these circumstances threw doubts on the nature of the material analysed by BASF AG. In the absence of any sales records, it was impossible to establish an unambiguous link between the material tested and Daplen<sup>®</sup>AH 5493 that was publicly available at the relevant date. Since, furthermore, also no link existed between the tested material and the material sold to the companies Fustiplast S.p.A. and Platinova Italiana S.p.A., the alleged prior uses must fail.

XII. Appellant 02 requested that the decision under appeal be set aside and the patent be revoked in its entirety.

The respondent requested that the appeal be dismissed, or, in the alternative, that the decision under appeal be set aside and the patent be maintained on the basis of auxiliary requests 1 to 5, all filed with the letter dated 22 April 2005.

### **Reasons for the Decision**

1. The appeal of appellant 02 complies with Articles 106 to 108 EPC and Rule 64 EPC and is therefore admissible.

2. *Novelty*

2.1 It is noted that the opposition division's finding on novelty was only challenged with respect to the alleged

prior use by the commercial product Daplen<sup>®</sup>AH 5493 which in itself has two aspects, namely

- (a) the prior use of Daplen<sup>®</sup>AH 5493 associated with the company BASF AG, and
- (b) the prior use occurring with the sale of Daplen<sup>®</sup>AH 5493 to the companies Fustiplast S.p.A. and Plastinova Italiana S.p.A.

2.2 In accordance with the jurisprudence of the boards of appeal (eg T 194/86, *supra*), in order to decide whether an alleged prior use is comprised in the state of the art it is necessary to establish

- (i) the date on which the alleged prior use occurred;
- (ii) exactly what was used; and
- (iii) under what circumstances the alleged use occurred, eg place of alleged use, possible secrecy agreements.

2.2.1 According to the datasheet D7, Daplen<sup>®</sup>AH 5493 is a linear polyethylene having a density of 0.955 g/ml, a high molecular weight and a broad molecular weight distribution. Furthermore, a melt index under a load of 21.6 kg (HLMI) of 2.5 is disclosed amongst other parameters. However, D7 does not disclose the following parameters for Daplen<sup>®</sup>AH 5493 which are mandatory features of the polymer claimed in Claim 1 of the patent in suit:

- the intrinsic viscosity  $[\eta]$ ,

- the R value, and
- the high-velocity impact strength (HRI-IZOD).

The latter parameter is necessary to verify whether or not Daplen<sup>®</sup>AH 5493 satisfies requirement (4) of Claim 1, namely the relationship between HRI-IZOD and HLMI expressed by the formula

$$\text{HRI-IZOD} \geq -\log\text{HLMI} + 1.15.$$

Finally, Daplen<sup>®</sup>AH 5493 was available to the public before the priority date of the patent in suit as is apparent from the publication date of D7 (02/92) and D15 disclosing sales data of Daplen<sup>®</sup>AH 5493 to the companies Fustiplast S.p.A. and Platinova Italiana S.p.A.

- 2.2.2 In order to demonstrate that Daplen<sup>®</sup>AH 5493 inherently had all the required parameters of Claim 1, BASF AG tested a sample of Daplen<sup>®</sup>AH 5493. The test reports D8 and D9 bear the date of 5 April 1993. Thus, it is clear that at some time before this date BASF AG must have been in possession of a sample of Daplen<sup>®</sup>AH 5493 in order for them to have performed the necessary tests and measurements. However, no further information concerning the circumstances of this prior use is apparent from the documents on file, eg when and how the material was acquired by BASF AG (bill of lading, invoice, etc).

- 2.2.3 This lack of further information concerning the circumstances of how BASF AG came into possession of the sample throws doubts on the nature of the sample itself. Thus, it may be that the tested sample corresponded to the commercially and publicly available Daplen<sup>®</sup>AH 5493, but it may also be, as argued by the respondent during the oral proceedings, that the tested material was a "special" material which was not available to the public, ie a material that fell outside the regular scheme such as a material in the stage of development.
- 2.2.4 In fact, there are strands of evidence on file which raise doubts as to whether BASF AG ever obtained a commercially and publicly available Daplen<sup>®</sup>AH 5493. Firstly, the accompanying letter to D7, ie a letter from Borealis dated 14 December 1998, states that the retrieval of sales data from 1992 might be expensive. However, no unambiguous statement is given that such data for the sample tested by BASF AG exist. Secondly, although the board pointed to the relevance of the circumstances associated with this alleged prior use in the communication accompanying the summons to oral proceedings (point VIII, above), appellant 02 neither replied to this issue nor attended the oral proceedings.
- 2.2.5 Thus, the circumstances under which the prior use of a Daplen<sup>®</sup>AH 5493 sample by BASF AG occurred remain unclear. In addition, this uncertainty even throws doubt on the nature of the material tested so that it is not clear what exactly was tested. In fact, it is impossible for the board to link the tested sample unambiguously to a Daplen<sup>®</sup>AH 5493 material that was commercially and publicly available before the priority date of the

patent in suit. Given the requirement for prior use allegations to be proven up to the hilt (T 472/92, 0J EPO 1998, 161; point 3.1 of the reasons), this uncertainty must lead to the conclusion that no lack of novelty (Article 54(2) EPC) has been sufficiently proven in the context of the alleged prior use of Daplen<sup>®</sup>AH 5493 by BASF AG.

2.2.6 Since the prior use of Daplen<sup>®</sup>AH 5493 by BASF AG already failed for the reasons given above, it was not necessary for the board to decide on the questions as to whether or not the tested sample had all the parameters required in granted Claim 1 and, in this connection, as to whether or not the properties of Daplen<sup>®</sup>AH 5493, and in particular the R value and the HRI-IZOD value, remained unchanged over the years.

2.2.7 As regards the alleged prior use occurring with the sale of Daplen<sup>®</sup>AH 5493 to the companies Fustiplast S.p.A. and Platinova Italiana S.p.A, it is evident from D15 that Daplen<sup>®</sup>AH 5493 has been sold to these companies before the priority date of the patent in suit but it has not been demonstrated that the Daplen<sup>®</sup>AH 5493 sold to these companies had all the parameters required in Claim 1 of the patent in suit, in particular the required R value and the required relationship between HRI-IZOD and HLMI. As regards these parameters, appellant 02 as well as former appellant 01 relied on the data obtained from the sample tested by BASF AG. Since, however, no unambiguous link between the material tested by BASF AG and a Daplen<sup>®</sup>AH 5493 material that was publicly available before the priority date of the patent in suit could be established (points 2.2.3 to 2.2.5, above), this argumentation must fail.

Consequently, also the second alleged prior use of Daplen<sup>®</sup>AH 5493 cannot be regarded as prior art in the sense of Article 54(2) EPC.

2.3 According to the decision under appeal, the claimed subject-matter is novel over D1 to D3. The board sees no reason to depart from that view. Nor was the finding of the opposition division in this respect challenged by appellant 02 or former appellant 01, respectively.

2.4 In conclusion, the subject-matter of Claim 1, and by the same token, the subject-matter of Claims 2 to 10, meets the requirements of Article 54 EPC.

3. *Inventive step*

As regards inventive step of the subject-matter of Claim 1, no case has been made by appellant 02 or by former appellant 01, respectively. The board sees no reason to criticize the finding of the opposition division in this respect (point 6 of the decision under appeal) and concurs with its finding that the subject-matter of Claim 1, and by the same token, the subject-matter of Claims 2 to 10, is based on 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:

E. Görgmaier

R. Young