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D E C I S I O N
of 20 November 1996

Case Number: T 0472/92 - 3.3.3

Application Number: 83100303.3

Publication Number: 0084360

IPC: B32B 5/18

Language of the proceedings: EN

Title of invention:

Sheet for forming sleeve and process for producing the same

Patentee:

SEKISUI KASEIHIN KOGYO KABUSHIKI KAISHA

Opponent:

Owens-Illinois, Inc.

Headword:

Joint Venture/SEKISUI

Relevant legal provisions:

EPC Art. 54, 56, 117, 125

EPC R. 72

Keyword:

"Novelty (yes) - prior public use not proved up to the hilt - assumption of confidentiality on the basis of a Joint Venture Agreement"

"Inventive step (yes) - no incentive - extrinsic properties of a material of prior public use not made available to the public by the mere delivery to the recipient company (see G 0001/92)"

Decisions cited:

G 0002/88, G 0009/91, G 0010/91, G 0001/92, T 0270/90,
T 0267/92, T 1002/92

Headnote follows :

Headnote:

- I. Although the standard of proof is the same for all objections covered by Article 100 EPC (cf. T 270/90 OJ EPO 93, 725), in those prior public use cases, where practically all the evidence in support of an alleged prior public use lies within the power and knowledge of the Opponent, the latter has to prove his case up to the hilt (Reasons 3.1).

- II. The printability of a material, as well as its surface characteristics after exposure to thermal shrinkage conditions, are not "intrinsic" properties which according to G 1/92, should be considered to have been made available to the public by the mere delivery of said material to a customer (Reasons 7.3.4 to 7.3.7).

Case Number: T 0472/92 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 20 November 1996

Appellant:
(Opponent)

Owens-Illinois, Inc.
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Respondent:
(Proprietor of the patent)

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Representative:

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Decision under appeal:

Decision of the Opposition Division of the
European Patent Office posted 29 April 1992
rejecting the opposition filed against European
patent No. 0 084 360 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: C. Gérardin
Members: P. Kitzmantel
J. A. Stephens-Ofner

Summary of Facts and Submissions

- I. European patent application No. 83 100 303.3 in the name of Sekisui Kaseihin Kogyo Kabushiki Kaisha, which had been filed on 14 January 1983, claiming priority from six JP applications, the earliest one filed on 14 January 1982, resulted in the grant of European patent No. 84 360 on 20 May 1987 on the basis of 13 claims.

The independent Claims 1, 10 and 11 read as follows:

"1. A sleeve comprising a laminated sheet (S) having two films, said laminated sheet having a different shrinkage rate in different directions, characterized in that said films comprise polystyrene, one of the said films (1) being a more highly shrinkable foamed film, and one of said films being a lesser shrinkable non-foamed film (2), said foamed film having a surface skin (11) thicker on its side opposite to that laminated to said non-foamed film;

flow-direction ends of said laminated sheet (S) being bonded together so that the thicker surface skin of said foamed film (1) faces the interior of said sleeve; and

said laminated sheet (S) having a flow-direction shrinkage rate of 60% or less and a widthwise shrinkage rate of 10% or less, said flow-direction shrinkage rate being greater than said widthwise shrinkage rate, the said shrinkage rates being obtainable by heating at 130°C for twelve seconds in an oven."

"10. A process for producing a sheet (S) for forming a sleeve in which a foamed film (1) and a non-foamed film (2) are concurrently extruded characterized by said

foamed film and said non-foamed film being polystyrene films; cooling said foamed film (1) more quickly than said non-foamed film (2), so that said foamed film (1) has a higher shrinkage rate than said non-foamed film (2), and said foamed film (1) has a surface skin layer (11) thicker on its side opposite that laminated to said non-foamed film (2); and

stretching the laminated sheet (S) at different rates relative to the flow and widthwise directions of said laminated sheet, so that the resulting flow-direction shrinking rate is greater than the widthwise shrinking rate and is 60% or less and said widthwise shrinking rate is 10% or less, the said shrinkage rates being obtainable by heating at 130°C for twelve seconds in an oven."

"11. A laminate comprising a sheet (S) having a foamed film (1) and a non-foamed film (2) characterized by said films comprising polystyrene, said foamed film being more highly shrinkable and said non-foamed film being less shrinkable, by said foamed film having a surface skin (11) thicker on its side opposite that laminated to said non-foamed film; and

said laminated sheet (S) having a flow-direction shrinkage rate of 60% or less and a widthwise shrinkage rate of 10% or less, said flow-direction shrinkage rate being greater than said widthwise shrinkage rate, the said shrinkage rates being obtainable by heating at 130°C for twelve seconds in an oven."

Dependent Claims 2 to 9 relate to preferred embodiments of the subject-matter of Claim 1; dependent Claims 12 and 13 relate to preferred embodiments of the subject-matter of Claim 11.

II. Notice of Opposition was filed by Owens-Illinois Inc. on 19 February 1988 requesting revocation of the patent in its entirety, on the ground that the claimed subject-matter lacked novelty and/or inventive step.

The opposition was essentially based

(i) on an alleged prior public use of the subject-matter of Claim 11 of the patent in suit caused by the delivery of Opponent's "General Purpose Plastishield" material to Sun-Lily Company, Japan, (hereinafter "Sun-Lily") and to Gerresheimer Glas AG, Germany, (hereinafter "Gerresheimer") as evidenced by

- a first Affidavit of Mr J. A. Karabedian, dated 8 February 1988, comprising Exhibits A and B, (hereinafter "Kara-1"), containing evidence for the delivery to

- Sun-Lily of 40 rolls of "General Purpose Plastishield" material, Order No. 69-8452, (hereinafter "consignment S3"; see Exhibit A of Kara-1)

and to

- Gerresheimer of 40 rolls of "General Purpose Plastishield" material, Order No. 69-8515, (hereinafter "consignment G3"; see Exhibit B of Kara-1)

supplemented in a later stage of the first instance opposition proceedings by

- a second Affidavit of Mr J. A. Karabedian, dated 13 December 1989, comprising Exhibits C to Q, (hereinafter "Kara-2"), containing additional evidence for consignments S3 and G3 and new evidence for the delivery to Sun-Lily

- of 6 rolls of "General Purpose Plastishield" material, Order No. 69-8464 (hereinafter "consignment S1; see Exhibits N, O, P of Kara-2),

and

- of 40 rolls of "General Purpose Plastishield" material , Order No. 69-8427 (hereinafter "consignment S2"; see Exhibit Q of Kara-2),

- a Declaration by Mr J. A. Karabedian, dated 27 January 1992,

- a first Affidavit of Mr M. Yoshida, dated 1 November 1989, comprising Exhibits SL-1 to SL-5, (hereinafter "Yoshida-1"),

- a second Affidavit of Mr M. Yoshida, dated 22 January 1992, (hereinafter "Yoshida-2"),

- a first Affidavit of Mr H. Takahashi, dated 8 December 1989, comprising Exhibits NKG1 and NKG2, (hereinafter "Taka-1"),

- a second Affidavit of Mr H. Takahashi, dated 21 February 1991, comprising Exhibits NKG 3 to NKG7, (hereinafter "Taka-2"),

- a third Affidavit of Mr H. Takahashi, dated 22 January 1992, (hereinafter "Taka-3"),

and

- a Declaration ("Eidesstattliche Erklärung") of Mr K. Kricheldorf, dated 23 January 1992, with Annexes ("Anlagen") 1 to 3, comprising evidence for consignment G3 referred to in Kara-1, as well as new evidence relating to the delivery to Gerresheimer of

- 3 rolls "General Purpose Plastishield", Order No. 69-8393, (hereinafter "consignment G1"), and

- 40 rolls "General Purpose Plastishield", Order No. 69-8414, (hereinafter "consignment G2").

and

(ii) on the disclosure, *inter alia*, in documents

(1) US-A-3 979 000 and

(4) GB-A-1 383 622.

III. By its decision announced orally on 28 January 1992 and issued in writing on 29 April 1992 the Opposition Division rejected the opposition, holding as follows:

- (i) (a) Concerning the issue of prior public use the evidence adduced by the Opponent in respect of consignments S3 and G3 (Exhibits A and B of Kara-1) could not prove with sufficient certainty that the materials of these deliveries had been received by the respective customers prior to 14 January 1982. Thus, these commercial transactions did not destroy the novelty of the subject-matter of Claim 11 of the patent in

suit, although it was recognized in that decision that the delivered materials did possess the features of said claim and were delivered free of any obligation of secrecy.

- (i)(b) The evidence concerning consignments S1, S2, G1 and G2, submitted by the Opponent after the termination of the opposition period, was to be disregarded under the provisions of Article 114(2) EPC because, on the one hand, it was filed late and, on the other hand, it was not prima facie sufficiently relevant, because no details of tests on either one of the materials of the consignments S2, G1 and G2 had been given, and because the tests relating to consignment S1 (Exhibit SL-5 of Yoshida-1) did not show that the shrinkage rates of the respective material were in accordance with the values required by Claim 11. It was also doubtful whether the materials of consignments S2 and S3 had the same properties, because with respect to the skin thickness and the sonic velocity of the tested materials there existed certain discrepancies between Exhibits H of Kara-2 and SL-5 of Yoshida-1 (the reference on page 11, first paragraph, line 6 of the appealed decision to "SL-1" is an obvious error).

The Opponent's offer of Mr Karabedian's oral testimony was declined by the Opposition Division, mainly because oral testimony was not considered appropriate to overcome the deficiencies in the late-filed documentary evidence.

- (ii) The objection of lack of inventive step based on documents (1) and (4) failed, mainly because a skilled person would not have considered to

combine the teachings of those two documents; in particular, there was no incentive to replace the polyethylene-based non-foam layer of the shrinkable polystyrene foam laminate according to document (1) by a polystyrene non-foam layer as disclosed in document (4) because the latter document related to the quite different field of rigid packaging materials involving different heat shrinkability requirements.

IV. Notice of Appeal against the above decision was filed by the Opponent (Appellant) on 20 May 1992. The fee for the appeal was paid on the same day and the Statement of Grounds of Appeal was submitted on 9 September 1992.

V. In an annex to the summons to oral proceedings, dated 5 September 1996, the Rapporteur informed the parties that the ground of prior public use in common with all other grounds of opposition fell to be decided on the balance of probability and not on some higher standard of proof and indicated that Mr Karabedian's oral testimony would be welcome and useful during the scheduled oral proceedings.

The latter were held on 20 November 1996 after receipt of a medical certificate confirming the Appellant's earlier intimation that Mr Karabedian's state of health precluded his attendance of the oral proceedings.

VI. In his written submissions as well as during the oral proceedings the Appellant presented the following main arguments:

- (i) As confirmed by a further Affidavit by Mr Karabedian, dated 26 August 1992, (hereinafter "Kara-3") all materials delivered to Sun-Lily and Gerresheimer were in accordance with the specifications as defined in the

"Manual for Extrusion, Decorating, & Testing Coextruded Plasti-Shield" prepared by Owens-Illinois (hereinafter "Manual") (see Exhibits C and D of Kara-2; excerpts of the versions of the "Manual" of February 1981 and November 1981, respectively, as submitted with an Affidavit of Mr W. Blackwelder, dated 18 October 1992). The shrinkage ranges (machine and cross directions) and the curl rating (towards the foam side) set out in said "Manual" (see particularly Exhibit D of Kara-2) demonstrated that the respective features of Claim 11 of the patent in suit were met by the delivered material. The same was true for the feature in Claim 11 that the surface skin of the foamed film was thicker on its side opposite that laminated to the non-foamed film, because this feature was an inevitable consequence of the cooling conditions after extrusion (see Section V, item D of the "Manual" filed together with the afore-mentioned Affidavit of Mr Blackwelder).

The materials of all consignments therefore met all the requirements of Claim 11 of the patent in suit (see Section 2 and Exhibits G to L of Kara-2; Exhibit SL-5 of Yoshida-1).

- (ii) Following a request of the Rapporteur in the annex to the summons to oral proceedings to substantiate some statements made in Kara-2 by submission of the respective original documents, the Appellant on 28 October 1996 filed a 5th Affidavit of Mr Karabedian dated 24 October 1996 (= "Kara-5") which, however, was not relied upon in the further appeal proceedings.

(iii) The documentary evidence submitted by the Appellant in order to demonstrate the timely delivery of the respective materials to the respective customers (Sun-Lily or Gerresheimer) was sufficient to prove that they were in possession of the materials before 14 January 1982, i.e. before the earliest priority date of the patent in suit. This had to be concluded from the following dates and from the normal travelling time of about 3 weeks by ocean freight to Japan and Germany:

S1: sent by air freight; import paper dated 22 September 1981 (Exhibits N, O, P of Kara-2);

S2: sent by ocean freight; "ON BOARD" on 19 September 1981 (page 1 of Exhibit Q of Kara-2); E.T.A. (= "estimated time of arrival") 19 October 1981 (page 5/7 of Exhibit Q of Kara-2); stamp of Yokohama Customs 30 October 1981 (page 6/7 of Exhibit Q of Kara-2);

S3: sent by ocean freight; shipping document dated 9 October 1981 (Exhibit A, page 2/2 of Kara-1);

G1: sent by air freight; date of commercial invoice 4 August 1981 (Annex 1 of Declaration Mr Kricheldorf);

G2: sent by ocean freight; stamp of customs Bremerhaven 17 September 1981 (Annex 2 of Declaration Mr Kricheldorf);

G3: sent by ocean freight; shipped
22 October 1981; E.T.A. 14 November 1981
(Exhibit B of Kara-1).

(iv) None of the deliveries S1 to S3 and G1 to G3 imposed on the recipient companies any obligation of confidentiality. After receipt by them the respective materials must therefore be considered to have been in the public domain (see Section 8 of Kara-1; Section D of Declaration of Mr Kricheldorf and Section 4 of Yoshida-2). While Sun-Lily was a Joint Venture of Owens-Illinois and Mitsui Toatsu, it was independent in its business activities (see Yoshida-2, Sections 3 and 4). This could be inferred

- on the one hand, from the large quantity of the materials delivered to Sun-Lily (from 1 roll 125000 labels could be made, thus the 86 rolls (6 + 40 + 40) altogether delivered to Sun-Lily were sufficient for more than 10 million labels). This demonstrated that these consignments could no longer have been part of a confidential inter-company research program, but were destined for "ordinary" sale without any confidentiality, and,
- on the other hand, from Exhibit J of Kara-2 (identical to Exhibit SL-5 of Yoshida-1) from which it was obvious that Sun-Lily, at the time of the delivery of consignments S1 to S3, had business relations with other suppliers of label materials which were competitive with the Owens-Illinois coextruded Plastishield material.

The fact that the material delivered to Sun-Lily was intended for pure commercialization was also underlined by its immediate handing over to the printing company Furubayashi Shiko Co., Ltd., and from there to Nippon Glass Co., Ltd. (hereinafter "NKG") for shrinking the printed labels in the form of sleeves onto bottles as well as by the ultimate delivery of the labelled bottles to Tokyo Canada Dry Co., Ltd.

Furthermore, the public character of the deliveries to Sun-Lily was not affected by the obligation of confidentiality imposed by Owens-Illinois on NKG in Article 15 of the Lease Agreement for the "Plasti-Shield Wrap Machine" (see Exhibit NKG2, pages 8 and 9 of Taka-1), because this clause did not extend to the properties of the material per se but merely to the use of the relevant machinery. It could therefore not be validly inferred from this contract that, as regards NKG, obligations of confidentiality continued to cover the properties of the materials in question.

As to the deliveries to Gerresheimer, these involved a complete and unconditional transfer of the property in the materials, free of any prior legal restraints such as, for example, confidentiality.

- (v) In view of the above matters, which showed the very high relevance - to the issue of the novelty of the subject-matter of Claim 11 - of the delivery of the materials of consignments S1, S2, G1 and G2, it was justified to admit into the proceedings all facts, evidence and

related arguments concerning these consignments regardless of the fact that they had been submitted outside the nine-month opposition period.

- (vi) From the matters set out in items (i) and (iii) above, it could also be concluded that all materials of the consignments S1 to S3 and G1 to G3 had all the features of the laminate according to Claim 11 of the patent in suit. Since, as set out in item (iii) above, the delivery of the materials of these consignments led to public use prior to 14 January 1982, the subject-matter of Claim 11 of the patent in suit was deprived of novelty by these commercial transactions.

- (vii) Prior public use destroying the novelty of the subject-matter of Claim 11 was also demonstrated by the evidence contained in and attached to the Affidavits of Mr Blackwelder dated 18 October 1992, Mr Syperski dated 15 October 1993, Mr Hinckley dated 20 October 1993 and Mr Karabedian dated 14 October 1993 (= "Kara-4"), submitted in the appeal proceedings and relating to deliveries by Owens-Illinois of its coextruded Plastishield material to companies within the United States in the years 1980 and 1981.

- (viii) The subject-matter of Claim 11 of the patent in suit was also non-inventive over the disclosure in the two newly cited documents, namely

(5) US-A-4 071 597 and

(6) US-A-4 069 934,

from which said subject-matter differed only in that the non-foam layer of the laminate was made from an ethylene polymer composition.

It would have been obvious to a skilled person looking for further laminates which were useful as shrinkable label material having good printing properties to substitute a polystyrene film for the afore-mentioned ethylene polymer film, because coextruded laminates comprising a polystyrene foam film and a polystyrene non-foam film had already been known to persons skilled in the art from

- (a) the material that was delivered to Sun-Lily and Gerresheimer (consignments S1 to S3 and G1 to G3), and
- (b) document (8) "New packaging dimensions", "The Hottest Soft Drink Package", Beverage World, June 1981, pages 50, 51 and 90.

The afore-mentioned objections against the patentability of the subject-matter of independent Claim 11 (directed to the laminate) were also used by the Appellant against independent Claims 1 (directed to sleeves made from the laminate) and 10 (directed to a method for making the laminate).

VII. In his written submissions as well as during the oral proceedings the Respondent (Patentee) presented the following main arguments:

- (i) The Appellant was wrong in contending that the mere fact that the materials delivered by Owens-Illinois to Sun-Lily and Gerresheimer conformed to the specifications set out in the "Manual", meant that they also necessarily had all the features of Claim 11 of the patent in

suit, since the requirements of Claim 11 were not fully reflected by these specifications (see points (a1) to (a3) below). Even if this were the case, this could not prove that the delivered products met all the features of the subject-matter of Claim 11 of the patent in suit, because some of the measured values of the delivered material failed to be consistent with the requirements of the "Manual" (see points (b1) to (b2.3) below).

The reasons for these conclusions were as follows:

- (a1) The "Manual" (see Exhibit D of Kara-2) specified shrinkage measurement conditions (points 7 and 8) which differed from those according to Claim 11 by the temperature (230°F (about 110°C) or 250°F (about 121°C) as opposed to 130°C), the heating medium (oil as opposed to air) and the heating time (1 minute as opposed to 12 seconds). There was no evidence from which it could be concluded with reasonable certainty that at the conditions of the "Manual" the limits for the shrinkage in flow direction and widthwise direction would be the same as those defined in Claim 11 (i.e. 60% or less, respectively, 10% or less);
- (a2) The curl behaviour set out in the "Manual" (Exhibit F of Kara-2) did not imply that the non-foam film necessarily must be shrinkable, as required by Claim 11, because curling towards the foam side would also occur when only the foam film was shrinkable, while the non-foam film did not shrink;

- (a3) The "Manual" was silent on the thickness of the surface skin on the side of the foam film opposite to the side laminated to the non-foam film. The cooling conditions set out in Section V, item D of the "Manual" (see excerpts of the "Manual", both versions: February 1981 and November 1981, attached to the Affidavit of Mr Blackwelder) were not sufficiently precise to lead to the conclusion that a foam structure with a thicker outside skin was the inevitable result of operating under the extrusion conditions specified in the "Manual";
- (b1) According to item 3 and Exhibit H of Kara-2 the average widthwise "shrinkage" rate at 250°F of the coextruded Plastishield material was measured to be -4.05%. This was inconsistent with the shrinkage ranges indicated in Section XI, point 8 of the "Manual" in both its versions (see Affidavit of Mr Blackwelder and Exhibit D of Kara-2), according to which the widthwise shrinkage at 250°F should be from 0-15% (February version) or up to 15% (November version), which values did not imply an **expansion** in widthwise direction, as evidenced by the negative sign of the value -4.05%.
- (b2) It was doubtful whether the "Manual" was consistent with some of the measurement results reported in Exhibits H to L of Kara-2 and Exhibit SL-5 of Yoshida-1:

(b2.1) While according to page 1 of Exhibit J (= page 1 of Exhibit SL-5) and page 1 of Exhibit L (= page 5 of Exhibit SL-5) the sheet thickness was 0.29 mm, in Exhibit K (= page 4 of Exhibit SL-5) a figure of "0.39" appeared, which was explained by the Appellant during the entire proceedings prior to the oral proceedings before the Board to relate to the thickness of the **unprinted** laminate, as opposed to the value of 0.29 mm referring to the **printed** (and thereby compressed) laminate. Only during the oral proceedings the Appellant withdrew this explanation, because he harboured doubts that the figure "0.39" did actually relate to the sheet thickness.

However, a thickness of 0.39 mm would lie outside the specifications of the "Manual" which sets an upper limit of 0.343 mm (13.5 mils x 0.0254 = 0.343 mm) for the "Composite Caliper" (point 1 of Exhibit D);

(b2.2) On page 1 of Exhibit J a "solid thickness" of 20 μm was indicated, which lay beyond the upper limit of the "Cap Stock Caliper" according to the "Manual" (point 3 of Exhibit D) of 15.2 μm (0.6 mils x 0.0254 = 15.2 μm);

(b2.3) On page 1 of Exhibit J a "sonic velocity" in machine direction (MD) of 1.91 km/sec was indicated, which again lay beyond the upper limit of the 1.80 km/sec set in the Manual (see point 10 of Exhibit D).

- (ii) As to **when** Sun-Lily and Gerresheimer had actually come into the possession of the materials of the consignments S1 to S3 or G1 to G3, respectively, the evidence submitted by the Appellant failed to demonstrate with sufficient certainty that this was before 14 January 1982.
- (iii) The fact that Sun-Lily was a Joint Venture company with Owens-Illinois as a partner implied that it was obliged to keep confidential the information it obtained from Owens-Illinois in respect of the latter's "General Purpose Plastishield Material". This was corroborated by the obligation of confidentiality imposed by Owens-Illinois on NKG in respect of the lease and the use of the Plastishield wrap machine, which use could not have been effected without knowledge of the properties of the material, which were, in consequence, likewise to be held confidential.
- (iv) The above considerations showed that the facts, evidence and related arguments submitted by the Appellant with respect to consignments S1, S2, G1 and G2 outside the opposition period were not so highly relevant as to justify their admission into the proceedings. In this respect the Respondent referred to the criteria for admissibility set out in T 1002/92 (OJ EPO 95, 605).
- (v) Since the Appellant had failed to demonstrate that the materials according to consignments S3 and G3 met all the requirements of Claim 11, the novelty objection against the subject-matter of

this claim, which was based on the alleged prior public use of the materials of these consignments, was unfounded.

- (vi) The evidence contained in the Affidavits of Mr Blackwelder, Mr Syperski and Mr Hinckley, submitted only in the appeal stage, did not refer to the specific materials as indicated in Kara-1 and, therefore, should not be admitted under Article 114(2) EPC; this evidence did not meet the standard for admissibility set out in T 1002/92, extending the basic legal principles expounded earlier in cases G 9/91 and G 10/91 (OJ EPO 93, 408 resp. 420), i.e. was not sufficiently relevant to prejudice the maintenance of the patent in suit.
- (vii) Concerning the issue of obviousness of the subject-matter of Claim 11, the problem to be solved by a skilled person starting from the disclosure of document (5) was the provision of a polystyrene foam based laminate which was suitable as a labelling material for bottles and which should have
- improved printability,
 - improved slipping properties, and
 - improved surface smoothness.

Neither in the disclosure of document (4), nor in the properties of the material (G3), whose delivery to Gerresheimer could possibly be considered to fulfil the conditions of prior public use, was there any hint that by substituting a polystyrene non-foam film for the

polyethylene non-foam film of document (5) and by making the non-foam film shrinkable these objectives could be achieved.

Similarly, the reference in document (8) to coextruded polystyrene was too vague to represent any guidance for a skilled person for the solution of the existing problem by the measures taken according to Claim 11 of the patent in suit. In view of its little relevance the late filed document (8) should not be admitted for consideration (Article 114(2) EPC).

VIII. The Appellant requested that the decision under appeal be set aside and the European patent No. 84 360 be revoked.

The Respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.
2. *Evidence submitted at the appeal stage*
 - 2.1 Of all documents cited in this late stage, namely:
 - (5) US-A-4 071 597,
 - (6) US-A-4 069 934,
 - (7) US-A-3 760 968,
 - (8) Beverage World June 1981, "New Packaging Dimensions", "The Hottest Soft Drink Package" by Elliot Bloom, pages 50, 51 and 90,

- (9) US-A-2 849 028,
- (10) US-A-3 619 344,
- (11) US-A-3 861 994,
- (12) Encyclopedia of Polymer Science and Technology,
volume 13, 1970, pages 385-386, and
- (13) US-A-4 126 238,

only documents (5) and (6) are admitted into these proceedings. The disclosure of these two documents is identical to a large extent, both relating to a container with improved heat-shrunk cellular sleeve, document (5) claiming the method for making the said container and document (6) claiming the container resulting therefrom. In view of the broad overlap of their disclosures, in the following only document (5) will need to be referred to (see point 4 below).

The other late filed documents, including document (8) which was particularly relied upon by the Appellant in his written submissions, add nothing of any importance to the state of the art which was already on file in the first instance opposition proceedings and they are not, therefore, admitted. In particular the reference in document (8) to a coextruded polystyrene package marketed by Owens-Illinois, apart from the presence of polystyrene in one part of said coextruded "package", lacks any information as to its further compositional and structural characteristics.

2.2 As far as it relates to matters that were at issue in the opposition proceedings (items 1 to 4 and 6), the third Affidavit of Mr Karabedian (Kara-3) is admitted

into the appeal proceedings, but not with respect to any new allegations of prior public use raised in connection with document (8) (item 5 of Kara-3).

2.3 The Affidavits of Mr Blackwelder, Mr Syperski, Mr Hinckley and the fourth Affidavit of Mr Karabedian (Kara-4), which relate to new allegations of prior public use, are not admitted into the proceedings (for more details see item 3.12 below). The excerpts of the two versions (February 1981 and November 1981) of the "Manual" attached to Mr Blackwelder's Affidavit are, however, admitted, since this information is only complementary to previously submitted evidence (Kara-2, Exhibits D, E and F).

2.4 The extremely late filed fifth Affidavit of Mr Karabedian (Kara-5) is likewise not admitted into the proceedings. Whilst this Affidavit and the attached photocopies of test reports were filed in response to the Rapporteur's request in the annex to the summons to oral proceedings, these documents are not the requested originals, nor do they add anything of significance to the evidence already on file (Exhibits G and H of Kara-2).

3. *Prior public use*

3.1 Concerning the standard of proof that needs to be applied, the established legal practice of the Boards is to use the self-same standard of proof in prior public use objections as it does in others covered by Article 100 EPC: the balance of probability (see, e.g. T 270/90 (OJ EPO 93, 725)). In that case, the Board expressly refused to accept a submission that the much more rigorous standard of "beyond all reasonable doubt" should apply, even if, as was the case there, **both** parties were able to access and to adduce evidence

relating to the decisive issue of confidentiality of the transactions alleged to constitute prior public use.

The Board reaffirms this approach, subject to the following caveat. Deciding any fact at issue by applying the above standard requires making a choice as to which one of the two contradictory propositions espoused by the parties is more likely to be true, since two contradictory propositions cannot, in logic and therefore in law, be either true or false. In judging the truth or falsity of either, regard must be had to the nature, content and likely source of the evidence that is available and can be adduced by the parties.

Generally speaking, in cases not involving the issue of prior public use, both parties are able to obtain and to adduce the evidence upon which their respective case rests. By contrast, in the majority of prior public use cases practically all the evidence in support of an alleged prior public use lies within the power and knowledge of the opponent, so the patentee seldom has any ready, or indeed any access to it at all. All he can, in practice, do is to challenge that evidence by pointing out any inconsistencies contained in it or to draw attention to any gaps in the chain of commercial transactions that needs to be established by the opponent in order to succeed on this ground.

In consequence, an opponent must prove his case **up to the hilt**, for little if any evidence will be available to the patentee to establish the contradictory proposition that **no** prior public use had taken place.

3.2 Concerning the issue whether an invention has been made available to the public by prior use, the following facts must be established to the above standard:

- (a) the date on which the prior use occurred ("when" issue),
- (b) exactly what was in prior use ("what" issue), and
- (c) the circumstances surrounding the prior use (issue of confidentiality).

Deliveries to Sun-Lily; Claim 11 of patent in suit

3.3 Turning to the deliveries to Sun-Lily (S1, S2 and S3), Affidavit evidence has been filed by Mr Karabedian and Mr Yoshida. The first witnesses' oral testimony was available to, but was declined by the Opposition Division. It was nonetheless informally requested by the Board outside the bounds of Article 117 and Rule 72 EPC in order to speed up these already protracted proceedings. The medical certificate evidencing his poor state of health constitutes a good and valid reason for his non-attendance, so that his written evidence will not, as it possibly could have been under Article 125 EPC, be regarded as unsafe and thus disregarded in its totality.

The first issue that falls to be decided is the alleged confidentiality of the delivery of the materials of consignments S1, S2 and S3, according to the Appellant sufficient for more than 10 million labels, by Owens-Illinois to Sun-Lily; these materials, **per se**, were being relied upon by the Appellant as constituting prior public use. The written evidence is as complex and compendious as it is lengthy in relation to **what**

was delivered and **when**. By contrast, it is somewhat brief upon the preliminary, but decisive question whether these deliveries were the outcome of a commercial, i.e. arms-length transaction of sale between Owens-Illinois and Sun-Lily or were the result of a transaction made under the aegis of some collaborative (albeit commercial) venture which imparted or expressly imposed an obligation of confidentiality upon Sun-Lily. If so, clearly, the "what" and "when" issues need not be decided at all with respect to these deliveries.

- 3.4 According to the uncontested evidence of Mr Yoshida (Yoshida-2) Sun-Lily **was** a business corporation set up as a joint venture between Owens-Illinois and Mitsui Toatsu, another Japanese company. In seeking to rebut the Respondent's submission that the deliveries to Sun-Lily were, expressly or by operation of law, made under confidentiality obligations directly or indirectly arising from Sun-Lily's "parentage", namely the Joint Venture between the Appellant Owens-Illinois and the Japanese company, Mr Yoshida merely asserted that in respect of its business activities Sun-Lily was "independent" of Owens-Illinois.

During the oral proceedings the Appellant was invited by the Board to shed some light upon the contents of the Joint Venture Agreement. Its earlier production in the proceedings could have resolved the key issue of the existence of an **express** confidentiality obligation between Sun-Lily and one of its "parents" or, at least, have enabled some conclusion to be drawn from the Agreement as a whole, including the usual Preamble setting out the purposes of the Joint Venture, as to the likely subsistence of implicit obligations of confidentiality. Unfortunately, such help was not forthcoming, indeed the Appellant's representative

admitted that he had never seen the Joint Venture Agreement, although, he then went on to assert that the deliveries in question had been made outside the scope of any confidentiality obligation possibly contained in it.

In the light of the absence of any evidence relating to the nature and content of the Agreement that set up Sun-Lily, and bearing in mind that Mr Yoshida appears, from the content of his evidence as a whole, to have been employed on the technical side of Sun-Lily, his knowledge of the nature and content of the Agreement and of its legal implications has to be treated as unsafe. It follows that the evidence as a whole is insufficiently weighty to meet the high **practical** standard of proof earlier referred to (point 3.1 above). This evidence therefore cannot, in itself, displace the presumption that the founding Joint Venture Agreement did, as is normally the case in order to protect the fruits of each partner's Research & Development, contain confidentiality conditions or warranties binding upon Sun-Lily in respect of its relevant business activities which the Board, again in the absence of sufficiently convincing evidence to the contrary, accepts to have covered the deliveries here at issue.

- 3.5 The Appellant additionally relied on two sets of commercial facts from which the arms-length nature of the deliveries could be convincingly inferred.
- 3.5.1 Firstly, the large quantity of material delivered, sufficient for more than 10 million labels, indicated a normal buyer-seller relationship. The Respondent countered by pointing to the continuing series of tests initially conducted by Sun-Lily and subsequently by NKG upon the material delivered, the latter company under

an express contractual obligation of confidentiality covering "the use of the machine" they employed. Thus, he argued, the materials delivered to Sun-Lily had not left the development stage, and the large number of labels was as consistent with a macro-scale testing programme as with an outright sale, so that the Appellant's case failed to meet the standard of proof required in prior public use cases and outlined previously in paragraph 3.1 *ibid*.

The Board accepts the Respondent's argument under this heading on the basis that there remains a sufficient and reasonable degree of doubt, as to precisely what legal conditions can be inferred from the large number of labels - if indeed 10 million was large having regard to the size of the potential/actual market for bottles.

Clearly, and in support of such doubt, the obligation of confidentiality fettering NKG's use of their machinery must have covered the very nature of what that machinery was being used to do, since such use would not have been possible without detailed knowledge of the properties of the material itself.

3.5.2 Secondly, much reliance was placed by the Appellant upon the fact that at the relevant time Sun-Lily were also evaluating materials submitted to them for testing, in the hope of subsequent orders, by other suppliers, undoubtedly competitors to Owens-Illinois.

Such a state of affairs is entirely normal. Material suppliers routinely submit samples of their wares to potential users, hoping for orders, and, conversely, users are interested to investigate samples of competitive products.

Routinely, too, material suppliers safeguard the fruits of their own Research & Development from the effects of the "springboard doctrine" common in Anglo-Saxon jurisdictions, here the U.S.A. where the Appellant is headquartered and based, by secrecy agreements. It follows that "independent" evaluation by Sun-Lily of labels made by the Appellant's competitors under such routine conditions, the existence of which the Appellant did not challenge during the entire opposition and appeal proceedings, argues **for** rather than against the subsistence of like conditions, i.e. conditions of confidentiality, between Owens-Illinois and Sun-Lily. It certainly cannot credibly be prayed in aid of a completely *laissez-faire* or arms-length relationship between these two companies, which were bound by the provisions of a Joint Venture Agreement. Thus Sun-Lily, whilst free to compare various labels, was not free to divulge their make-up to anyone.

On this footing, too, the Appellant's case must therefore fail.

- 3.6 Accordingly the Board finds that the Appellant has not established to the required standard of proof that deliveries S1, S2 and S3, or either of them, were made as a result of a normal commercial arms-length sale by the Appellant to Sun-Lily. Therefore, this part of the prior public use attack fails.

Deliveries to Gerresheimer; Claim 11 of the patent in suit

- 3.7 In contrast to the special relationship between Owens-Illinois and Sun-Lily as established by the Joint Venture Agreement, the evidence adduced with respect to the deliveries from Owens-Illinois to Gerresheimer (consignments G1, G2 and G3) clearly established that

these were made under the normal conditions of an arms-length sale, in which, on receipt of the goods, the buyer acquires full beneficial ownership of those delivered goods without any prior accrued legal rights, including those of confidentiality. This also has the effect of establishing state of the art that had been available to the public within the meaning of Article 54(2) EPC.

3.8 As to the **dates** on which the materials of consignments G1, G2 and G3 were received by Gerresheimer, no documents were produced indicating any particular date. The documents submitted with the Declaration of Mr Kricheldorf (Annexes 1 to 3) do, however, lead to the conclusion with an extremely high degree of certainty that all these materials were in the possession of Gerresheimer before 14 January 1982:

In particular:

Consignment G1: Annex 1 comprises correspondence between Gerresheimer and Owens-Illinois dated 22 July 1981 according to which 3 rolls of coextruded foam should immediately be delivered by air freight; furthermore the evidence comprises a "Commercial Invoice and Packaging List" from Owens-Illinois to Gerresheimer for 3 rolls Plastishield coextruded polystyrene, order No. 69-8393 (= G1), dated 4 August 1981 (i.e. more than 5 months before 14 January 1982);

Consignment G2: Annex 2 comprises correspondence between Gerresheimer and Owens-Illinois dated 31 July 1981 according to which 40 rolls of coextruded foam should be delivered by ocean freight; furthermore the evidence comprises a "Commercial Invoice and Packaging List" from Owens-Illinois to Gerresheimer for 40 rolls Plastishield polystyrene coextruded foam, order No. 69-8414 (= G2), dated 28 August 1981, carrying a stamp from the customs office at Bremerhaven of 17 September 1981 (i.e. almost 4 months before 14 January 1982);

Consignment G3: Annex 3 comprises an "International Export Order" from Owens-Illinois to Gerresheimer for 40 rolls Plastishield polystyrene coextruded foam, order No. 69-8515 (= G3) carrying an "order date" of 15 October 1981 and a "want date" of 23 October 1981, as well as an "Export Shipping Release" indicating a (printed) sailing date of 29 October 1981, an E.T.A. of 14 November 1981 and carrying a manuscript note "shipped 10/22/81". Since the latter date is one week prior to the printed sailing date mentioned in this document, the actual time of arrival was probably also before the indicated ETA (i.e. about 2 months before 14 January 1982).

Taking this evidence as a whole, the Board concludes that Gerresheimer did receive the relevant materials before 14 January 1982.

- 3.9 The last issue to be decided with respect to the alleged prior public use of the material of consignments G1, G2 and G3 is **what** the delivered materials actually were.

The Appellant admitted in the oral proceedings that no test reports had been submitted which referred directly and individually to the materials of these consignments; instead he relied upon the bare assertion in Section 2 of Kara-3 that all materials of these consignments had been made on the same machine in Toledo, Ohio, and had been manufactured in accordance with the "Manual".

For the following reasons, the documentary evidence submitted by the Appellant is insufficiently cogent and convincing to support his allegation that the delivered materials complied with all the requirements of Claim 11 of the patent in suit.

- 3.9.1 *Relative shrinkability of the foamed film and the non-foamed film*

According to the "Manual" (Exhibit F of Kara-2) the laminate curls towards the foam side, thus indicating a higher shrinkage rate of the foamed film. The Appellant is, however, right that this behaviour does not imply that the non-foamed film must be shrinkable, because curling towards the foam side may also occur when the non-foamed film does not shrink at all (or does even expand). The presence of a film of non-foamed

polystyrene which is shrinkable is, however, a feature not only of Claim 11, but is also stressed as an essential feature in the specification of the opposed patent on several places: page 2, lines 59 to 62; page 3, lines 8 to 11 and page 15, lines 43 to 44.

3.9.2 *Shrinkability in flow (= machine) direction*

According to the "Manual" (Exhibit E of Kara-2) the shrinkage rates of the laminate in machine direction and in cross direction are measured in an oil bath at 230°F (about 110°C) or 250°F (about 121°C) for a period of 1 minute. In Exhibit H shrinkage measurements at 250°F are reported made at the date of the production of the test sample (26 August 1981) and two weeks later (9 September 1981). The latter measurements, which are closer to the use conditions of the material, show average shrinkage values (calculated from measurements of four samples taken from different locations of the extruded material) in machine direction of 58,15% (see also point 3 of Kara-2). The table and the graph on pages 1 and 2 of Exhibit L of Kara-2 compare the shrinkage values obtained by testing the materials delivered to Sun-Lily, measured at 110°C and 100°C, respectively. The measurements after 60 seconds show an increase of the shrinkage in machine direction from 14.5% to 48.8% when the temperature of measurement is increased by 10°C from 100°C to 110°C. If these data are compared with the average shrinkage of 58,15% measured by Mr Karabedian at 121°C on, allegedly, the same materials, it appears that an enhancement of the machine direction shrinkage over and above the value of 60% (which is the upper limit according to Claim 11 of the patent in suit) cannot be ruled out when the temperature of the shrinkage measurement is further increased by 9°C from 121°C to 130°C.

In consequence, there is considerable doubt as to the correctness of the assertion of Mr Karabedian in points 5 to 7 of Kara-2 and point 2, penultimate paragraph on page 2 of Kara-3, namely that the oil bath tests at 250°F (121°C) for a period of 1 minute performed by Owens-Illinois led to the same results as the oven test at 130°C for 12 seconds prescribed according to present Claim 11.

3.9.3 *Shrinkability in widthwise (cross) direction*

Moreover, as set out in the preceding paragraph, the average shrinkage in cross direction is reported in point 3 of Kara-2 (in accordance with the data contained in Exhibit H measured on 9 September 1981) to be -4.05%. Therefore the material, instead of shrinking at the testing conditions, **expanded** in that dimension. Such a physical behaviour is inconsistent with the requirement in Claim 11 of the patent in suit for a "widthwise shrinkage rate of 10% or less", which implies that, on heating, at least some shrinkage occurs as confirmed by the description of the patent in suit; according to page 16, lines 1-3 a sleeve manufactured from the laminate according to Claim 11 should have "almost no shrinkage in its axial direction" (which is the original cross direction), according to Example 2 (page 7, lines 63-64) the shrinkage rate in the direction of width is 2%, and according to Table II (page 10) the widthwise shrinkage rate is 3%.

3.9.4 Thus, the Appellant has failed to establish to the standard required (see point 3.1 super ibid.) that the materials tested by Owens-Illinois on 9 September 1981 met the shrinkage requirements according to Claim 11.

3.10 In consequence, the attack on the novelty of the subject-matter of Claim 11 based on the alleged prior public use by the delivery of the materials of consignments G1, G2 and G3 also fails.

Deliveries to the Laboratory of Forming Plastics, Furubayashi Shiko, NKG and Tokyo Canada Dry; Claim 11 of the patent in suit
(see Exhibit L of Kara-2, Exhibit SL-5 of Yoshida-1; Exhibit SL-4 of Yoshida-1; Affidavits Taka-1 and Taka-2)

3.11 For the reasons set out in the preceding paragraphs these deliveries did not give rise to prior public use of the laminates according to Claim 11 of the patent in suit, irrespective of any other considerations which might lead to the same conclusion (confidentiality, possibility to determine on the shrunken labels the shrinkage characteristics of the laminate before shrinkage).

Deliveries within the U.S.A.; Claim 11 of the patent in suit

3.12 The evidence for these deliveries was submitted at a late stage in the appeal proceedings.

3.12.1 The Board concurs with the finding in T 1002/92 (Reasons 3.4, paragraph 7) that in proceedings before the Boards of Appeal new facts, evidence and related arguments, which go beyond the "indication of facts evidence and arguments" presented in the notice of opposition pursuant to Rule 55(c) EPC in support of the grounds of opposition on which the opposition is based, should only very exceptionally be admitted into the proceedings, if such new material is prima facie highly

relevant in the sense that it can reasonably be expected to change the final outcome of the case and is thus highly likely to prejudice the maintenance of the opposed patent.

3.12.2 While the Affidavits of Mr Blackwelder, Mr Syperski, Mr Hinckley and Mr Karabedian (= Kara-4), including the Exhibits attached to them, delve in considerable detail into the history of the development of the coextruded Plastishield material by Owens-Illinois, the only concrete evidence they offer with respect to alleged deliveries of coextruded polystyrene label material consists of photocopies of bills of "Lily OI, Division of Owens-Illinois" to Laurens Glass Co. and Brockway Glass Co. (Affidavit of Mr Hinckley, Exhibits A1 to A3, B1 to B3 and C1 to C3, respectively D1 to D3 and E1 to E3).

The information contained in these bills with respect to **what** was sold is, however, restricted to some rather jejune and very meagre statements, like "CO-EXT REX RT BR", "CO-EXT SPRITE" or "CO-EXT MELLO YELLO".

3.12.3 This evidence is far too vague and inconsequential to permit the Board to draw the conclusion that the material that was delivered was indeed made in accordance with the specifications in the "Manual", or, for that matter, in accordance with the requirements of present Claim 11.

3.12.4 The Appellant has thus failed to demonstrate that his late filed evidence was sufficiently relevant to the issue of novelty of the subject-matter of Claim 11 of the patent in suit, i.e. relevant to such an extent as to be highly likely (or even likely) to prejudice the maintenance of the patent (cf. T 1002/92 supra).

3.12.5 These late filed facts, evidence and related arguments are therefore excluded from the appeal proceedings pursuant to Article 114(2) EPC.

3.13 The entire **novelty** attack based on the **prior public use** of the subject-matter of **Claim 11** of the patent in suit **therefore fails**.

Independent Claims 1 and 10

3.14 While the above considerations relate to the subject-matter of Claim 11 of the patent in suit, the same conclusions apply to the subject-matter of the further independent Claims 1 and 10. These claims comprise the same structural and shrinkage characteristics as Claim 11, the presence of which was decisive for the conclusion of the Board with respect to the novelty of the subject-matter of this latter claim under the aspects of the alleged prior public use.

Objections based on literature

4. As compared with the disclosure of document (1) which was accepted as the closest prior art during the opposition proceedings, the disclosure of document (5) is closer to the subject-matter of the patent in suit because, in contrast to document (1), the non-cellular layer of the sleeve shrunk onto the container is said to be positioned away from the container wall. Otherwise the disclosures of documents (1) and (5) are very similar to one another and are therefore equally relevant to the present issues.

4.1 Document (5)

This document relates to a method according to which a heat-shrinkable sheet is formed into a sleeve which is heat shrunk into snug engagement onto a container wherein the sheet has a composite structure comprising a closed cellular polymeric layer preponderantly of polystyrene, intended for engagement with the container wall, and a non-cellular polymeric layer having preponderantly ethylene moieties, the latter layer being disposed outwardly of said cellular layer and in adherent engagement therewith (Claim 1; column 3, lines 16 to 39; Figure 1 and column 3, lines 52 to 60).

According to column 8, lines 34 to 47 the sheet has a much greater heat shrinkage in machine direction than in cross direction, with representative shrinkages, in the temperature range of about 200°F to about 300°F, of about 35 to 85% (machine direction) and about 3 to about 32% (cross direction).

According to the only method described the composite is preferably manufactured by extrusion coating of the non-cellular layer, which needs not be heat-shrinkable, onto the previously formed heat-shrinkable, closed cellular layer (column 8, line 59 to column 9, line 4).

The cellular layer is preferably manufactured by the bubble extrusion technique with subsequent stretching of the sheets generated by cutting the extruded tube. In order to produce skin layers on the respective sides of the material issuing from the extrusion die, conventional air cooling is employed. The thinner one of the skins generated thereby is later on, in the

stage of extrusion coating, brought into contact with the non-cellular layer (column 9, lines 8 to 25; column 9, line 64 to column 10, line 20; column 12, lines 5 to 7).

In a preferred embodiment, before extrusion coating the non-cellular layer onto the cellular layer, the latter is provided with a decorative image (column 11, lines 49 to 54; column 12, lines 5 to 7). According to column 10, lines 21 to 30, this decorating method is particularly advantageous because of the protection conferred by the translucent non-cellular layer covering the decorative image provided on the surface of the thinner skin of the cellular layer.

- 4.2 While there is thus a broad overlap between the subject-matter disclosed in document (5) and that claimed and described in the patent in suit, there are two significant differences.

First, the material of the non-cellular layer according to (5) is an ethylene polymer composition, not a polystyrene as required in the patent in suit; secondly, the non-cellular layer, which has to be shrinkable according to the patent in suit, is not shrinkable according to the only method disclosed in document (5) (see column 8, line 68 to column 9, line 4; column 10, line 11 to 20).

5. *Novelty*

From the facts set out in the preceding paragraph the Board concludes that the subject-matter of all independent claims of the patent in suit is novel over the disclosure in the nearest prior art document (5).

6. *Problem and solution*

6.1 The problem to solved by the subject-matter of product Claims 1 and 11 of the patent in suit, when starting from document (5), was the provision of a similar composite laminate, suitable for the fabrication of sleeves which can be heat-shrunk onto bottles, said laminate comprising a heat shrinkable foamed polystyrene layer, where the outer surface of the laminate, that is the surface which faces away from the container wall when a sleeve formed from the laminate is heat-shrunk onto a container (e.g. bottle), should have a good printability and - when the sleeve is shrunk onto a container - be smooth and even.

With respect to process Claim 10, a further aspect of the problem was the development of a method for the manufacture of such a laminate.

6.2 According to the patent in suit the above problem is solved, as far as product Claims 1 and 11 are concerned, by the use of polystyrene as material of the non-foam layer as well as by imparting a certain (low) shrinking capability to this layer, and, as far as process Claim 10 is concerned, a further element of the solution is the manufacture of the two layer laminate by coextrusion.

6.3 From the description of the patent in suit it can be inferred that the laminates prepared according to the independent claims of the patent in suit have very good printability characteristics and that the sleeves produced therefrom have a smooth and even outer surface (page 7, line 51; page 10, Table II, Experiment 1; page 15, lines 44 to 46). Apparently the coextrusion technique is appropriate, together with the other measures taken, to engender these favourable properties of the laminates.

During the oral proceedings the Appellant admitted that the polystyrene non-foam layer of the laminates of the patent in suit offered an improved printability and that this was fully in line with the contents of document (5) which in fact militated against the direct printing of the outer surface of the laminate by recommending that the printing should be covered by a protective film of the non-foam layer. Similarly it stood to reason, and was indeed not contested by the Appellant, that the shrinkability of the non-foam layer, owing to the tension caused by the shrinking process, helped to prevent an uneven surface which might result from an unbalanced correlation of the shrinkabilities of the foam and non-foam layer.

In the absence of any counterevidence, the Board accepts that the above-mentioned technical problem has been effectively solved in all its aspects by the measures required by Claims 1, 10 and 11 of the patent in suit.

7. *Inventive step of the subject-matter of independent Claims 1, 10 and 11*

7.1 There is nothing in document (5) itself which could be regarded by a skilled person as an incentive to substitute a polystyrene non-foam layer for the ethylene polymer composition based non-foam layer used according to this document.

7.2 During the written proceedings the Appellant relied upon document (4) in order to demonstrate that one skilled in the art of packaging technology was familiar with laminates comprising a cellular and a non-cellular layer, both consisting of polystyrene.

While it is correct that document (4) discloses a laminate packaging material comprising an inner layer of foamed polystyrene and two (outer) non-foamed facing layers comprising a copolymer of styrene and butadiene (Claims 1 and 4 to 6; page 2, lines 16 to 47), this material is supposed to be rigid like the cardboard laminates it is replacing, but without the latter's tendency to absorb liquid (page 1, lines 18 to 37; page 2, lines 114 to 122).

Document (4) is totally silent about any shrinkage characteristics of the laminates and thus about the problem of providing, after the shrinking step, an even and smooth surface; it is also silent about the printability characteristics of non-foam layers.

This document therefore does not provide any incentive for a skilled person to substitute polystyrene as material of the non-foam layer of the laminates disclosed in document (5) for the ethylene polymer composition.

For this reason the obviousness objection against Claims 1 and 11, insofar as it is based on the combination of documents (4) and (5), fails.

7.3 However, in order to supplement the features which were missing from the disclosure of document (5), the Appellant also relied on the facts of the alleged **prior public use** in order to establish his case on obviousness. The Appellant contended that it was established beyond any doubt that coextruded polystyrene laminates consisting of a polystyrene foam layer and a polystyrene non-foam layer had been delivered without any obligation of confidentiality before 14 January 1982 (date of the first priority of the patent in suit) to Gerresheimer. Since these

laminates were thus part of the state of the art under Article 54(2) EPC, a skilled person would have been aware of their good printability and would therefore have been encouraged to replace, in the laminates of document (5), the ethylene polymer composition based non-cellular layer by a non-foam layer made of polystyrene.

Whilst at first blush not altogether unconvincing, this argument also fails for the following reasons.

7.3.1 The materials of consignments G1, G2 and G3 that can be recognized to have been in possession of Gerresheimer and whose composition and internal structure were thus available to the public in the sense set out in the opinion of the Enlarged Board in G 1/92 (OJ EPO 93, 277), were laminates comprising two layers of polystyrene, one non-foamed and the other foamed, the latter having a surface skin thicker on its side opposite to that laminated to the non-foam layer, and the two layers of the laminate having certain shrinkage characteristics, which might or might not fall within the definitions in Claims 1, 10 and 11 of the patent in suit.

7.3.2 The assertions in item C of the Declaration of Mr Kricheldorf

- that the foils were printed on by Cito Kunststoff und Verpackung GmbH to be used as labels for encircling glass bottles,
 - that bottles were labelled under his supervision in Gerresheimer's Düsseldorf plant and
-
- that a part of the so labelled bottles was delivered to Teutoburger Mineralbrunnen in 1981,

are not backed by any documentary evidence able to support them or to establish their veracity which, having regard to the subjective character of any such declaration, needs material support, particularly in view of the time lapse of 10 years between the facts alleged to have taken place and the evidence adduced.

The Appellant has therefore failed to establish that the coextruded polystyrene laminates of consignments G1, G2 and/or G3 were delivered to Cito Kunststoff und Verpackungs GmbH before 14 January 1982. He has also failed to prove that the labelled bottles were delivered to Teutoburger Mineralbrunnen prior to this date. Since Cito Kunststoff und Verpackung GmbH, for the purpose of printing the labels, was a contractual partner of Gerrersheimer, it is also reasonable to assume that it was not free to divulge the knowledge it gained from the work it was performing on behalf of and paid for by Gerrersheimer, but was bound by either explicit or implicit obligations of confidentiality, as is the normal business relationship in transactions of this kind.

7.3.3 It follows from the above that the evidence adduced by the Appellant fails to establish that printed labels made from the materials of consignments G1, G2 and G3 have been in the public domain before 14 January 1982.

7.3.4 In G 1/92, after having stated in Section 1.4 that:

"An essential purpose of any technical teaching is to enable the person skilled in the art to manufacture or use a given product by applying such teaching. Where such teaching results from a product put on the market, the person skilled in the art will have to rely on his general technical knowledge to gather all information enabling him to prepare the said product. Where it is possible

for the skilled person to discover the composition or the internal structure of the product and to reproduce it without undue burden, then both the product and its composition or internal structure become state of the art."

the Enlarged Board went on to state in Section 3:

"It may be added that a commercially available product **per se** does not implicitly disclose anything beyond its composition and internal structure. Extrinsic characteristics, which are only revealed when the product is exposed to interaction with specifically chosen outside conditions, e.g., reactants or the like, in order to provide a particular effect or result or to discover potential results or capabilities, therefore point beyond the product **per se** as they are dependent on deliberate choices being made. Typical examples are the application as a pharmaceutical product of a known substance or composition (cf. Article 54 (5) EPC) and the use of a known compound for a particular purpose, based on a new technical effect (cf. G 2/88, OJ EPO 90, 93 and 469). Thus, such characteristics cannot be considered as already having been made available to the public."

In line with the above statements in G 1/92, the Board concludes that the printability characteristic of the materials of consignments G1, G2 and G3 was not a property that became available to the public by their mere delivery to Gerresheimer, since this is clearly an extrinsic characteristic requiring interaction with specifically chosen outside conditions.

In this context reference is also made to decision T 267/92 of 4 June 1996 (not published in EPO OJ), in which it was held that the SBSS (short-beam-shear strength) of a fibre-reinforced composite and the tensile strength and yield strength of the matrix material of the composite must be regarded as extrinsic properties, since they depend on an interaction with an external environment. Consequently, a parameter comprising a ratio of the values of these properties was considered not to be within the implicit disclosure of a prior art document otherwise disclosing the essential characteristics of the subject-matter under consideration (Sections 4.6.2 to 4.7 of the Reasons).

- 7.3.5 From the conclusion arrived at in point 7.3.3 above, namely that printed labels made of the materials of consignments G1, G2 or G3 did not belong to the state of the art which was available to the public prior to 14 January 1982, and from the fact discussed in point 7.3.4 above that the printing characteristic of the said materials was also not within the public domain before this date, it follows that the person skilled in the art did not have any information concerning the printability of the materials of consignments G1, G2 and G3 at the relevant time.
- 7.3.6 Therefore, the materials delivered to Gerresheimer did not and could not have led the person skilled in the art wishing to improve the printability of the laminate material according to document (5), which desired improvement was one aspect of the problem underlying the present invention (see point 6.1 above), to replace or try to replace the ethylene polymer composition of the non-foam layer of the laminate according to document (5) by polystyrene.

7.3.7 As to the further aspect of the problem underlying the subject-matter of the patent in suit, i.e. the provision of a smooth and even surface of the non-cellular layer of the material shrunk onto bottles (see again point 5.1 above), this must also be regarded as being an extrinsic characteristic, since its determination requires interaction with outside conditions (thermal shrinking). Furthermore, and as set out above, there remains considerable doubt as to whether Gerresheimer was indeed in possession of label material shrunk onto bottles prior to 14 January 1982.

Applying the requisite standard of proof (paragraph 3.1 supra ibid.) the Board concludes that the surface properties of the label material shrunk onto bottles cannot be regarded as having been in the public domain before that date.

Consequently, the person skilled in the art could not, within the available time ending on 14 January 1982, derive or glean from the materials of consignments G1, G2 and/or G3 any clue as to the possible smoothness and evenness characteristics that these materials would have after they have been shrunk onto bottles.

7.3.8 It follows that the materials of the alleged prior public use could not have led the person skilled in the art, wishing to solve all the product-oriented aspects of the existing problem, to substitute as material of the non-foam layers of the relevant laminate polystyrene for the ethylene polymer compositions used according to document (5).

In consequence, a combination of the information concerning those characteristics of the materials of consignments G1, G2 and G3, which were accessible to the person skilled in the art under the provisions of Article 54(2) EPC, with the disclosure in the nearest

prior art document (5), does not render obvious the subject-matter of the independent product Claims 1 and 11 of the patent in suit.

7.3.9 The same conclusion applies to independent process Claim 10, which comprises, in the form of definitions by purpose or functional definitions, the same essential features as Claims 1 and 11.

7.4 Neither of the above outlined obviousness attacks made by the Appellant on the subject-matter of independent Claims 1 and 11 is, therefore, established.

7.5 Owing to their dependency on independent Claims 1 and 11, respectively, the attacks on Claims 2 to 10, 12 and 13 stand in the same position.

8. In summary, none of the objections pleaded and supported by the Appellant prejudice the maintenance of the unamended patent.

Therefore, the appeal has to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:


E. Gorgmayer

The Chairman:


C. Gérardin