

Internal distribution code:

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

**Datasheet for the decision
of 31 July 2012**

Case Number: T 1810/09 - 3.3.09
Application Number: 01934507.3
Publication Number: 1291380
IPC: C08J 9/00, A61F 13/514,
C08L 23/14, C08L 23/16,
C08L 23/10

Language of the proceedings: EN

Title of invention:

Porous polypropylene film, process for producing the same, and
absorbent article employing the film

Patentee:

NEW JAPAN CHEMICAL CO., LTD.

Opponent:

Treofan Germany GmbH & Co. KG

Headword:

-

Relevant legal provisions:

EPC Art. 54, 56

Keyword:

"Novelty, inventive step (yes)"

Decisions cited:

-

Catchword:

-



Case Number: T 1810/09 - 3.3.09

DECISION
of the Technical Board of Appeal 3.3.09
of 31 July 2012

Appellant: Treofan Germany GmbH & Co. KG
(Opponent) Am Prime Parc 17
D-65479 Raunheim (DE)

Representative: Mai, Peter M.
Mai, Dörr, Besier
Patentanwälte - Steuerberater -
Wirtschaftsprüfer
John-F. Kennedy-Straße 4
D-65198 Wiesbaden (DE)

Respondent: NEW JAPAN CHEMICAL CO., LTD.
(Patent Proprietor) 13, Yoshijima Yagura-cho
Fushimi-ku
Kyoto-shi, Kyoto 612-8224 (JP)

Representative: Barz, Peter
Meissner Bolte
Widenmayerstraße 48
D-80538 München (DE)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 3 July 2009
rejecting the opposition filed against European
patent No. 1291380 pursuant to Article 101(2)
EPC.

Composition of the Board:

Chairman: W. Sieber
Members: W. Ehrenreich
K. Garnett

Summary of Facts and Submissions

I. Mention of the grant of European patent No. 1 291 380 in respect of European patent application No 01 934 507.3, filed as International application No. PCT/JP2001/004669 on 1 June 2001 in the name of *New Japan Chemical Co., Ltd*, was announced on 13 April 2005 in Bulletin 2005/15.

II. The patent was granted with 16 claims. Claim 1 reads as follows:

"1. A porous polypropylene film with excellent breathability and continuous through-pores and made of a propylene-based resin composition comprising

(I)

(i) a propylene-ethylene copolymer having an ethylene content of 3.0 to 7.0 wt.% and a melt flow rate (MFR, JIS K-6857) measured at 230°C of 2.0 to 4.0 g/10 min or

(ii) a polypropylene-based resin mixture containing a propylene-ethylene copolymer, the mixture having an ethylene content of 3.0 to 7.0 wt.% and a melt flow rate (MFR, JIS K-6857) measured at 230°C of 2.0 to 4.0 g/10 min and

(II) a β -crystal nucleating agent;

the film having a porosity of 20 to 80%, a Gurley air permeability of 5,000 sec/100 cc or lower as measured according to JIS P-8117, a water vapor permeability of 2,000 g/m²•24h or higher as measured according to

JIS Z-0208 and a water pressure resistance of 75 kPa or higher as measured according to JIS L-1092 except that an aqueous surfactant solution is used instead of pure water."

The further independent claims are directed to a process for preparing the film according to claim 1 (claim 8), a backsheet for absorbent articles comprising the film according to claim 1 (claim 14) and an absorbent article comprising the backsheet according to claim 14 (claim 15).

III. An opposition against the patent was filed by

Treofan Germany GmbH & Co. KG

on 13 January 2006.

The opponent requested revocation of the patent on the grounds according to Article 100(a) EPC that the claimed subject-matter lacked novelty and lacked an inventive step. In support of its objections the opponent cited a number of documents, including

- D1 EP-A 0 865 909
- D2 EP-A 0 865 913
- D4 US-A 5 176 953
- D5 EP-A 0 632 095
- D6 F. Chu et al., "Crystal transformation and micropore formation during uniaxial drawing of β -form polypropylene film", Polymer volume 36 No. 13, 2523-2530 (1995)
- D7 F. Chu et al., "Structure and gas permeability of microporous films prepared by biaxial drawing of

β -form polypropylene", Polymer volume 37 No. 4,
573-579 (1996)

D8 F. Chu et al., "Microvoid formation process during
the plastic deformation of β -form polypropylene",
Polymer volume 35 No. 16, 3442-3448 (1994).

IV. With its decision announced orally on 17 June 2009 and
issued in writing on 3 July 2009 the opposition
division rejected the opposition.

The opposition division held that none of the cited
documents disclosed a porous film as characterised in
claim 1. Some of the parameters were not even mentioned
in the prior art. Nor had the opponent shown that the
prior art films inherently fulfilled the requirements
of claim 1. In fact, specific processing conditions
(e.g. a specific chill roll temperature) in combination
with a specific ethylene content and melt flow rate of
the propylene-based polymer composition were necessary
in order to arrive at the claimed porous polypropylene
film. This specific combination was not disclosed in
the prior art, in particular not in D1, D2 or D4.

As regards inventive step the opposition division
considered D5 representative of the closest prior art
and defined the problem to be solved as the provision
of a porous polypropylene film with excellent
breathability and continuous through-pores for use as a
backsheet for absorbent articles. The opposition
division argued that D5 neither disclosed the claimed
film parameters concerning Gurley air permeability,
water vapour permeability and water pressure resistance,
nor disclosed the specific ethylene content of the
propylene-based resin composition. Because D5 also did

not address the problem posed, the claimed film was not obvious, whether from D5 alone or in combination with other documents.

V. Notice of appeal against the decision was filed by the opponent (hereinafter: appellant) on 2 September 2009. The prescribed fee was paid on the same day. The grounds of appeal were received on 13 November 2009.

VI. In its letter setting out the grounds of appeal the appellant maintained its view that the claimed film was not novel over the disclosure in either D1 or D2 and was not inventive when starting from D5 as closest prior art and combining it with D1 or D2.

Further documents were filed, inter alia

D10 Copy of the Japanese Industrial Standard
JIS K 6857.

Under the heading "unclarity" the appellant noted that the norm JIS K 6857 referred to in the claims did not relate to the measurement of the melt flow rate (MFR), as was evident from D10. Therefore, the question arose how the missing information concerning the measurement of the MFR is to be evaluated and whether the invention could be carried out.

VII. With its letter of response dated 21 May 2010 the proprietor (hereinafter: respondent) filed, as main request, a new set of claims 1 to 16 which differed from the granted claims only by the correction of the Japanese Industrial Standard in claims 1, 4, 5, 8 and 9 from "JIS K-6857" to "JIS K-6758". In the respondent's

view a correction of an obvious error under Rule 139 EPC should be possible. In support of this argument it filed *inter alia*

D11 JIS K 6758 Japanese version
D11a JIS K 6758 English translation.

VIII. On 31 May 2012 the board issued a communication wherein observations on the respondent's request to correct the obvious error, novelty and inventive step were made.

As to the issue of the requested correction under Rule 139 EPC the board noted that this request raised an issue that was also the subject of the pending reference before the Enlarged Board of Appeal in G1/10 and that the present case would have to be adjourned to await the outcome of the reference in G1/10 if the respondent's request was maintained and was the only issue remaining at the end of the forthcoming oral proceedings.

Concerning novelty the board expressed its doubts that either D1 or D2 anticipated the claimed subject-matter.

As regards inventive step the board noted that a skilled person starting from D5 as the closest prior art would have had no incentive to adjust the processing conditions in such a way that a film meeting the parameters of claim 1, which was superior in breathability, water vapour permeability and water pressure resistance and was therefore suitable for absorbent articles, would result. The board also noted that D1 and D2 both related to a different technical

field and would therefore possibly not be a suitable starting point for solving the problem posed.

- IX. In the week before the scheduled oral proceedings decision G1/10 of the Enlarged Board of Appeal was issued. This decision was immediately sent by fax to the parties.
- X. Oral proceedings before the board were held on 31 July 2012. At the end of oral proceedings the respondent modified its request in view of G 1/10 and requested that the appeal be dismissed, i.e. that the patent be maintained as granted.
- XI. The arguments of the appellant provided in writing and orally may be summarized as follows:

(a) Novelty

The parameters characterising the polypropylene film of claim 1 expressed a result to be achieved and there was no teaching in the claims as to how these parameters could be achieved.

Moreover, the industrial standard JIS K 6857 indicated in claim 1 for measuring the (MFR) of the polypropylene compositions (i) and (ii) was wrong and a skilled person could not find the correct norm JIS K 6758 (submitted by the respondent as D11/D11a) without undue burden. Even if a skilled person would find the correct norm JIS K 6758, he would have to select a crystallinity of 50 mole-% or more according to

Note (1) of D11a, which was, however, not a feature of claim 1.

Therefore, the MFR values given in claim 1 in respect of JIS K 6857 could not be determined correctly and were therefore meaningless for the characterization of the polypropylene composition.

As regards D1 and D2, a substantial overlap between the film of claim 1 and the films disclosed in D1 and D2 existed concerning the MFR and the ethylene content of the polypropylene composition on the one hand and the processing conditions for preparing the films, i.e. the stretching factors and the chill roll temperature/contact time on the other. Consequently, when performing the teaching of D1 or D2, a skilled person would inevitably arrive at a film according to claim 1 of the patent in suit.

(b) Inventive step

The closest prior art was represented by D5 relating to porous stretched polypropylene-based films with excellent properties as regards pore structure and interpenetrating properties (page 9, lines 22 to 29 and table 1, examples 8 and 9). The claimed film differed from the film of D5 in that

- the polypropylene polymer has an ethylene content of 3 to 7 %;
- an MFR according to JIS K 6857 was defined which, however, was meaningless;
- film parameters were defined which expressed a result to be achieved.

No specific effect was shown in the patent which was caused by the above distinguishing features. This for instance became evident when considering comparative examples 5 and 7 according to table 4 of the patent specification. These demonstrated films based on the polypropylene compositions PP16 and PP18 with an unsatisfactory Gurley air permeability and water vapour permeability, or even film breakage, although the MFR of the polypropylene component B1 (2.5 g/10 min) as part in both compositions was in the claimed range of from 2.0 to 4.0 g/10 min.

Apart from that, the skilled person would be prompted by the prior art to select the processing requirements as indicated in claim 1 in order to arrive at the claimed film because:

- examples 8 and 9 of D5 showed that a film with excellent pore structure can be obtained when the polypropylene has an MFR of 4.3 and 1.4g/10 min, respectively, ie at values below and above the end points of the claimed MFR range;
- D1 disclosed propylene ethylene copolymers with an ethylene content of 0 to 5 % and an MFR of 1 to 10g/10 min, both ranges embracing or overlapping with the corresponding claimed ranges;
- it could be derived from D4 (column 9, line 65 to column 10, line 6) that for propylene-ethylene copolymer compositions including a β -spherulite nucleating agent the cooling time of a molten film is critical for the formation

of β -spherulite crystals and that too-rapid cooling leads to small or no β -spherulites;
- it was disclosed in D6 (page 2526) and confirmed by D7 (page 574, left column) and D8 (page 3442, right column in conjunction with page 3448, left and right column) that a chill roll temperature of 110°C, i.e. a temperature indicated in paragraph [0084] of the patent specification, resulted in films with the highest porosity.

XII. The respondent's counterarguments may be summarized as follows:

(a) Novelty

It was established jurisprudence of the Boards of Appeal that polymers/polymer compositions can be characterised by physical parameters. Apart from that, it was clearly indicated in the patent specification (process claim 8, description, examples) how films with the claimed parameters can be achieved.

Melt flow rate (MFR) of polymers was a common parameter in the prior art. Its determination at a temperature of 230°C was a common standard measure described in several industrial standards (e.g. ISO, ASTM). The skilled person would realize that the reference to JIS K 6857 was wrong but it would be no undue burden for a skilled person to find the number of the corresponding Japanese standard and recognise it as being the correct one. This all the more so as JIS K 6758 was the only

available Japanese industrial standard dealing with the measurement of the MFR of polypropylene.

As regards the footnote (1) in JIS K 6758 (D11a) referring to the crystallinity of >50% of the polypropylene, which was not a feature in claim 1, it should be noted that common polypropylene is crystalline and paragraph [0071] of the patent specification referred to a polypropylene crystallinity of at least 65%.

The claimed film parameters therefore did not express a result to be achieved and the claimed MFR range was not meaningless. Furthermore, it was clearly shown in the examples and comparative examples of the patent specification that the ethylene content and the MFR of the propylene-based resin and the conditions for processing the polymer are critical for the performance of the invention.

On that basis it had to be investigated whether there was an explicit and unambiguous disclosure in D1 or D2 of a polypropylene film having all features indicated in claim 1. This was not the case. In particular:

- a selection had to be made from the disclosure in D1 (page 3, lines 39/40) and D2 (page 3, lines 32/33), namely ethylene as comonomer from ethylene/butylene and an ethylene portion of 3 to 7% from 0 to 5% ethylene/butylene;
- a specific MFR of 2.0 to 4.0 g/10 min had to be selected from the overlapping MFR range;

- from the overlapping processing conditions, ones had to be selected from D1 and D2 which inevitably lead to a film having the parameters indicated in claim 1.

It should further be noted that all examples in D1 and D2 were related to a polypropylene homopolymer and not a copolymer with 3 to 7% ethylene. Therefore, the experimental evidence reworking examples of D2, as provided in the appellant's grounds of appeal, could also not bring novelty into doubt.

(b) Inventive step

When considering D5 as the closest prior art the problem to be solved was the provision of polypropylene films with improved mechanical properties in conjunction with an improved water vapour permeability and water pressure resistance. The examples and comparative examples in the patent specification showed that the ethylene content and the MFR of the propylene-ethylene copolymer raw material were critical features for the desired film parameters claimed in claim 1.

The comparative examples in Table 4 of the patent specification showed that a polypropylene homopolymer resulted in a film having unsatisfactory stretching properties. Melt flow rates below or above the claimed range of 2.0 to 4.0 g/10 min (comparative examples 5 and 7) led to a too high Gurley air permeability and a low water permeability or even to a breakage of the film.

A skilled person starting from D5 as the closest prior art would not be induced by the prior art to select the ethylene content and the MFR within the claimed range in order to adapt the films of D5 so as to make them suitable as backsheet materials for absorbent articles. This was because D5 was concerned with printing sheets, tracing paper and food packaging materials rather than with absorbent articles. Moreover, a skilled person would not combine D5 with D1, the latter dealing with polymeric labels, which belong to a different technical field.

XIII. The appellant requested that the decision under appeal be set aside and the patent be revoked.

XIV. The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.
2. The melt flow rate (MFR)
 - 2.1 Claim 1 requires that the melt flow rate (MFR) of the propylene-ethylene copolymer (i) or the polypropylene-based resin mixture (ii) is determined according to JIS K 6857 at 230°C, and that the value has to be within the range of 2.0 to 4.0 g/10 min. However, the skilled person would either know or at least realise when repeating the invention that the number "6857" given in claim 1 cannot be correct and is therefore

erroneous. This is because JIS K 6857 does not relate to the MFR measurement of polypropylene but deals with testing methods for resistance of adhesive bonds to water or moisture (see D10).

As to what was intended, the skilled person again would either know or easily find out that the numbers had merely been transposed and that the intended standard was JIS K 6758. This all the more so as JIS K 6758 (D11a) is, as pointed out by the respondent, the only Japanese standard which deals with testing methods for polypropylenes. This latter point was not contested by the appellant.

- 2.2 The appellant argued that even if the skilled person would find JIS K 6758, he would still not be sure whether this norm should be applied in the present case. This is because, as is apparent from Note (1) of JIS K 6758 (D11a), this standard relates to homopolymers of essentially crystalline propylene and copolymers of essentially crystalline propylene containing 50 mol % of propylene unit, whereas crystallinity was not a feature of claim 1. Furthermore, JIS K 6758 refers in point 4.1 to JIS K 7210 for measurement details. Other industrial standards would use different conditions.

The board does not agree with this line of argument. The skilled reader learns from the patent specification (e.g. paragraphs [0012] and [0071]) that polypropylene copolymers with high crystallinity are the precursor materials for the claimed porous polypropylene film. Thus, on the contrary, Note (1) in section 1 of D11a endorses the view that JIS K 6758 is indeed the correct standard to be applied in the patent in suit.

Once it is established that JIS K 6758 is the correct standard, the information in this document would be the only relevant information for the skilled person. The reference in point 4.1 to JIS K 7210 therefore determines the measuring conditions to be used in the context of JIS K 6758. The fact that other industrial standards would require different measuring conditions (such as DIN 53 735 or ASTM-D 1238) is then of course of no relevance.

2.3 In summary, when reading the patent in suit or trying to implement the invention disclosed therein the skilled person would realize that JIS K 6857 was an erroneous disclosure and that JIS K 6758 was meant. The MFR required in claim 1 for the polypropylene copolymer materials (i) and (ii) is therefore a meaningful and reproducible parameter of the propylene-based resin composition.

2.4 The appellant tried to associate the transposed figures in the JIS standard with lack of clarity and even insufficiency of disclosure. Apart from the fact that clarity is not a ground of opposition and, as pointed out by the respondent, insufficiency of disclosure was not relied on as a ground of opposition, there is no need to further elaborate on these issues since, as explained above, the skilled person would realise that the reference to JIS K 6857 is an error and that JIS K 6758 was meant.

3. Interpretation of claim 1

3.1 In the oral proceedings the appellant argued that the open definition of claim 1 ("composition comprising ...") gave rise to various interpretations when a polypropylene mixture is used to prepare the film.

For example, the raw material PP16 used in comparative example 5 is a mixture of 35% of a propylene-ethylene block copolymer A1 and 65% of a propylene-ethylene block copolymer B1. The film prepared from PP16 is labelled in table 4 as comparative example because this mixture does not meet requirement (I)(ii) of claim 1 owing to the MFR of the mixture of 1.4 g/10 min, which is outside the claimed range.

However, due to the open claim formulation, comparative example 5 could be looked at differently. Copolymer B1 itself has an MFR of 2.5 g/10 min and an ethylene content of 4.7 wt.%, i.e. copolymer B1 itself meets requirement (I)(i) of claim 1. Due to the open wording of claim 1, copolymer A1 could be just a further polymer component which might be present in the composition of embodiment (I)(i). Under this assumption comparative example 5 would be within the scope of claim 1.

Therefore the MFR of propylene-based resin composition required in claim 1 was not a purposive feature of the invention and could therefore not contribute to the assessment of inventive step.

3.2 The board cannot accept this argument. Claim 1 defines the propylene-based resin composition in two alternative ways. The composition is either:

(i) a propylene-ethylene copolymer having an ethylene content of 3.0 to 7.0 wt.% and an MFR of 2.0 to 4.0 g/10 min;

or

(ii) a polypropylene-based resin mixture, the mixture having an ethylene content of 3.0 to 7.0 wt.% and an MFR of 2.0 to 4.0 g/10 min.

From that definition it would be evident to the skilled person that if only the propylene-ethylene copolymer is used, then requirement (i) of claim 1 applies. On the other hand, if a propylene-based resin mixture comprising more than one polymer is used (as in comparative example 5) then requirement (ii) of claim 1 has to be applied.

This interpretation is confirmed by the disclosure in the description of the patent specification where the following is stated in paragraphs [0019] and [0020]:

"When the ... propylene-ethylene copolymer under item (i) above is used alone, the copolymer can be a random copolymer or a block copolymer ...";

"When the polypropylene-based resin mixture under item (ii) above is used, it is sufficient that at least one component of the mixture is a propylene-ethylene copolymer. Thus, the mixture may be a mixture of two or more kinds of propylene-ethylene copolymers, or a

mixture of at least one propylene-ethylene copolymer and other propylene-based resin(s)."

Hence, in the light of the above, there is no sensible reason to interpret the mixtures of propylene-ethylene block copolymers PP16 as an embodiment of feature (i). Therefore, the raw polymer mixture PP16 used in comparative example 5 has to be evaluated in the sense of feature (ii) of claim 1, i.e. comparative example 5 is outside the scope of claim 1.

Similar considerations apply to comparative example 7.

4. The characterization of the film of claim 1 by parameters

The appellant argued that no instruction was given in claim 1 as to how the parameters characterizing the claimed film can be achieved. Therefore, the parameters expressed a result to be achieved.

According to the established jurisprudence of the boards of appeal (Case Law of the Boards of Appeal, 6th edition 2010, II.B.1 point 1.1.2) products can be specified by parameters related to the physical structure of the product, provided that the parameters can be clearly and reliably determined by objective procedures; it is not mandatory to give instructions in the claim itself as to how the product is to be obtained.

In the patent specification clear indications are given, by reference to the relevant Japanese industrial standards, how the claimed film parameters are to be

determined (claim 1; paragraph [0057]). Furthermore, the patent provides detailed instructions how the claimed porous film can be obtained, ie by adjusting the ethylene content and the MFR of the propylene-based resin composition (claim 1; paragraph [0076]), the amount of the β -crystal nucleating agent (paragraphs [0055/56]), the crystallization temperature and crystallization holding time of the unstretched web sheet (paragraphs [0082] to [0094]) and the stretching conditions (paragraphs [0096] to [0102]). The film according to claim 1 is therefore clearly and unambiguously defined and not characterised in the sense of a result to be achieved.

5. Novelty

5.1 The appellant based its novelty attack only on documents D1 and D2.

5.2 A film having all the parameters of claim 1 is not explicitly disclosed in D1 and D2. However, in the appellant's view the films disclosed in D1 or D2 inherently possess the structural and physical parameters of the claimed film because there was a considerable overlap between the disclosure in D1/D2 and the teaching of the patent in respect of the specification of the propylene-based resin and the process conditions for preparing the film.

5.3 The board does not accept this argument because it can be concluded from the examples and comparative examples of the patent that several selections from the overlapping ranges in D1 or D2 have to be made in order

to arrive at a film having the properties claimed,
namely

- an ethylene content and an MFR of the propylene-based resin of 3.0 to 7.0 wt% and 2.0 to 4.0 g/10 min (D1 (page 3, lines 38 to 44) and D2 (page 3, lines 30 to 36) disclose an ethylene or butylene content of 0 to 5 wt.% and an MFR of 1.5 to 6.5 g/10 min);
- a crystallisation temperature between above 110°C and below or equal to 130°C (D1 (page 4, lines 35 to 39) and D2 (page 4, lines 22 to 27) disclose a preferred cooling or crystallisation temperature from 90 to 140°C);
- a minimum crystallization holding time (depending on the crystallisation temperature) of 10 sec (not disclosed in D1 or D2).

It is shown in the patent in suit that these selections are critical in order to obtain the claimed film. These combinations are, however, not clearly and unambiguously derivable from the application as filed. Consequently, D1 and D2 cannot inherently disclose the claimed film.

5.4 From the above it follows that the claimed film is neither explicitly nor implicitly disclosed in D1 or D2.

6. Inventive step

6.1 The patent in suit relates to a porous polypropylene film having numerous fine, continuous through-pores

which provide the film with an excellent breathability, and make it suitable as backsheet material for absorbent articles. The film should also have good water vapour permeability and good texture, as well as good strength and leakage prevention (paragraphs [0001] and [0009] of the patent specification).

6.2 The board agrees with the parties that D5 represents the closest prior art. D5 discloses a porous stretched film of a β -crystalline polypropylene-based resin which finds wide application, for example as a membrane having a multiplicity of interpenetrating pores. The membranes are *inter alia* useful for moisture-permeating and water-proofing purposes (D5, page 2, lines 1 to 3 and page 9, lines 22 to 29).

6.3 In the light of this closest prior art the respondent saw the problem underlying the claimed invention as being the provision of a film having continuous through-pores and having an improved mechanical strength in combination with an improved water permeability and breathability.

As a solution to this problem, claim 1 proposes a film made of a propylene-based resin and a β -crystal nucleating agent, wherein the propylene base-resin is characterised by structural and physical properties and the film is characterised by specific physical parameters.

The base-resin is either:

- (i) a propylene-ethylene copolymer having an ethylene content of 3.0 to 7.0 wt.% and an MFR of 2.0 to

4.0 g/10 min at 230°C measured according to JIS K 6758 (see point 2 above);

or

- (ii) a polypropylene-based resin mixture containing a propylene-ethylene copolymer, wherein the mixture has a ethylene content o 3.0 go 7.0 wt.% and an MFR of 2.0 to 4.0 g/10 min at 230°C measured according to JIS K 6758.

The resulting film has the following properties:

- (a) a porosity of 20 to 80%;
- (b) a Gurley air permeability of 5,000 sec/100cc or lower (JIS P-8117);
- (c) a water vapour permeability of 2,000 g/m²•24h or higher (JIS -0208);
- (d) a water pressure resistance of 75 kPa or higher (JIS L-1092) except that an aqueous surfactant solution is used instead of water.

6.4 The experimental evidence in the patent specification embracing examples 1 to 17 and comparative examples 1 to 10 illustrated in tables 1 to 4 shows the following results for the stretched β -crystal-based films:

- The films according to examples 1 to 17, wherein the propylene-based resin either fulfils condition (i) or (ii) of claim 1 and the film was processed under the chill roll and stretching conditions given in paragraphs [0084] to [0089] and [0096] to [0100] of the patent specification, have the claimed film properties (a) to (d).

- The films according to comparative examples 1 and 5 wherein the propylene-based resin has an MFR which is too low but was processed under the same processing conditions as above have an uneven stretching (comparative example 1) or a Gurley air permeability which is too high, and a water permeability which is too low (comparative example 5). Breakage occurs with films according to comparative examples 3, 6, 7, where the MFR is too high.

- The films with an ethylene content for the propylene-based resin which is outside the claimed range of 3.0 to 7.0 wt.% (no ethylene: comparative example 2; too high: comparative example 4) have either an uneven stretching or exhibit breakage.

- The films in which the propylene-based resin meets requirements (i) and (ii) of claim 1 but which were processed at a lower (comparative example 8) or higher chill roll temperature (comparative example 9) or at a very short chill roll contact time (comparative example 10) have a Gurley air permeability which is too high, and a water vapour permeability which is too low.

These results clearly show that the structural and physical properties of the propylene-based resin according to claim 1, in combination with specific processing conditions given in the patent specification, results in a film with the desired parameters according to features (a) to (d) in claim 1. The board is therefore satisfied that the objective problem, namely to provide films with continuous

through-pores and having an improved mechanical strength in combination with an improved water permeability and breathability, is solved by the claimed invention.

- 6.5 It remains to be decided whether the claimed solution, namely the film of claim 1, is obvious.

None of the cited documents contains any information indicating that a specific ethylene content in the propylene-based resin in combination with a specific MFR of this resin is an essential prerequisite for achieving the desired parameters (a) to (d) of the claimed film. Although the films of D1 and D2 have partially overlapping ranges in respect of the ethylene content (0 to 5 wt.%) and the MFR (1.0 to 10 g/10 min) of the propylene-based resin composition, there is no incentive for a skilled person to apply the specific combination of the respective ranges in accordance with claim 1 in order to optimize the parameters (a) to (d) of the claimed film as demonstrated in comparative examples 1 to 7.

The film porosity alone (feature (a) of the claimed film) is not a sufficient prerequisite for an optimum of the other parameters (b) to (d), as shown by comparative examples 5 and 8 to 10. The board can therefore not accept the appellant's argument that since the films of examples 8 and 9 of D5 having an MFR of the polypropylene resin slightly above and below the claimed range have an excellent porosity there is no inventive step.

The board also cannot accept the appellant's argument that a skilled person would arrive at the claimed film in view of the disclosure in D4 and D6 to D8. This is because these documents only relate to good porosity as a consequence of adjusting the cooling time of the molten film (D4) and the appropriate chill roll temperature (D6 to D8). No information can be extracted from these documents that these measures would have to be combined with the specific ethylene content and MFR of the propylene-based resin for optimizing the other film parameters.

The film of claim 1 is therefore based on an inventive step. The same applies to the process of claim 8 for preparing the film of claim 1, the backsheet for absorbent articles according to claim 14 comprising the film of claim 1, and the absorbent article of claim 15 comprising the backsheet of claim 14.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

G. Röhn

W. Sieber