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**Datasheet for the decision  
of 7 September 2022**

**Case Number:** T 2217/19 - 3.3.03

**Application Number:** 11753777.9

**Publication Number:** 2545118

**IPC:** C08F279/02, C08L51/04,  
F25D23/06

**Language of the proceedings:** EN

**Title of invention:**

MONOVINYL AROMATIC POLYMER COMPOSITIONS WITH A NOVEL  
COMBINATION OF STIFFNESS AND STRESS CRACK RESISTANCE

**Patent Proprietor:**

INEOS Styrolution America LLC

**Opponents:**

Total Research & Technology Feluy  
Trinseo Europe GmbH

**Relevant legal provisions:**

EPC Art. 54, 56

**Keyword:**

Evidence - evaluation of evidence  
Novelty - implicit disclosure (no)  
Inventive step - main request - obvious alternative (yes)  
Inventive step - auxiliary request - obvious solution (yes)



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**Case Number: T 2217/19 - 3.3.03**

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.03**  
**of 7 September 2022**

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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
21 June 2019 concerning maintenance of the  
European Patent No. 2545118 in amended form.**

**Composition of the Board:**

**Chairman**            D. Semino  
**Members:**            M. Barrère  
                             W. Ungler

## Summary of Facts and Submissions

I. The appeals of the opponents lie against the interlocutory decision of the opposition division concerning maintenance of European Patent number 2 545 118 in amended form on the basis of the claims of auxiliary request 1 filed during the oral proceedings on 16 May 2019 and an amended description.

II. The following documents were *inter alia* cited in the opposition division's decision:

D2: US 4,144,204

HE1: EP 0 669 947 B1

HE2: Declaration by Claude van Nuffel dated 20 December 2017

HE4: Test report "TNV-1467" for experimental HIPS resin "XZ95163.10", 1988

IB3: Ullmann's Encyclopedia of Industrial Chemistry, chapter "Polystyrene and Styrene Copolymers", 6<sup>th</sup> edition, 2005

IB5: Rubber-Toughened Styrene Polymers - A Review, A. Echte, Advances in Chemistry, ACS, 1989, pages 15 to 64

III. In that decision the opposition division held, among others, that:

- The subject-matter of claim 1 of auxiliary request 1 was novel over HE1.
- The closest prior art for the subject-matter of claim 1 of auxiliary request 1 was HE1. Claim 1 differed from the disclosure of HE1 in that the

rubber modified polystyrene composition comprised 0.1 wt% to 1 wt% of mineral oil. Based on the experimental evidence provided in the opposed patent, the problem to be solved was formulated as the provision of a rubber modified polystyrene with improved properties without impairing processability. The solution to this problem was neither disclosed nor hinted at in HE1 or IB3, which represented common general knowledge. Therefore claim 1 of auxiliary request 1 involved an inventive step.

- IV. Opponents 1 and 2 (appellants 1 and 2) filed an appeal against said decision.
- V. With the rejoinder to the statement of grounds of appeal, the patent proprietor (respondent) filed three sets of claims as auxiliary requests AR1 to AR3.
- VI. Oral proceedings were held before the Board on 7 September 2022.
- VII. The appellants requested that the decision under appeal be set aside and the patent be revoked.

The respondent requested that the appeals be dismissed (main request), or in the alternative that the patent be maintained on the basis of one of auxiliary requests AR1 to AR3 filed with the rejoinder to the statements of grounds of appeal.

- VIII. Claim 1 as maintained by the opposition division (main request of the respondent) read as follows:

"1. A rubber modified polystyrene composition comprising:

a reaction product formed by polymerizing a monomer mixture comprising: at least 75 weight percent of one or more monovinylaromatic monomers in the presence of rubber particles to form a dispersion of rubber particles in a vinyl aromatic polymer;

wherein the dispersed rubber particles have an average particle diameter of from 6 to 10 microns;

wherein the composition has a gel content of from 28 % to 36 % by weight;

wherein the composition has a swell index of less than 13; and

wherein the composition contains plasticizer in an amount of at least 0.1 wt.-% and no more than 1 wt.-%, said plasticizer consisting of mineral oil."

Claim 1 of auxiliary request AR1 differed from claim 1 of the main request in that:

the dispersed rubber particles have an average particle diameter of from **7** to 10 microns, and

the composition has a gel content of from **29** % to **35** % (modifications in **bold** here and in the following requests).

Claim 1 of auxiliary request AR2 differed from claim 1 of the main request in that:

the dispersed rubber particles have an average particle diameter of from **7** to **9** microns,

the composition has a gel content of from **29** % to **34** % and

the amount of plasticizer is at least **0.5** wt.-% and no more than 1 wt.-%.

Claim 1 of auxiliary request AR3 differed from claim 1 of auxiliary request AR1 in that:

the composition has a swell index of **at least 2** and of less than **10**.

The remaining claims of these requests are not relevant to this decision.

IX. The appellants' submissions, in so far as they are pertinent to the present decision, may be derived from the reasons for the decision below. They were essentially as follows:

(a) Novelty

It was clear from HE2 that the compositions of HE1 were characterised by a swell index and a gel content as set out in claim 1 of the main request.

Therefore the subject-matter of claim 1 of the main request lacked novelty over HE1.

(b) Inventive step

The subject-matter of claim 1 of the main request and of auxiliary requests AR1 to AR3 did not involve an inventive step over HE1 as the closest prior art.

- X. The respondent's submissions, in so far as they are pertinent to the present decision, may be derived from the reasons for the decision below. They were essentially as follows:

(a) Novelty

Document HE1 did not disclose a composition characterised by the combination of features according to claim 1 of the main request.

The subject-matter of claim 1 of the main request was therefore novel over HE1.

(b) Inventive step

The subject-matter of claim 1 of the main request and of auxiliary requests AR1 to AR3 involved an inventive step over HE1 as the closest prior art.

## **Reasons for the Decision**

Main request

1. Novelty

- 1.1 According to the appellants, claim 9 of HE1 discloses a rubber modified polystyrene composition comprising less than 0.5 wt% of mineral oil as plasticiser. Said claim is furthermore dependent of claim 1 which defines the nature of the composition including the particle size



of the rubber particles. While the swell index and the gel content of the compositions of HE1 are not disclosed therein, it can be derived from HE2 that the compositions of HE1 and in particular the one of its example 1 are characterised by a swell index and a gel content according to claim 1 of the main request.

Therefore the subject-matter claim 1 of the main request would lack novelty over HE1.

- 1.2 The respondent considers that the data provided in HE2 are not credible. Consequently there would be no evidence that the gel content and the swell index of the compositions of HE1 are within the ranges of claim 1.

On that basis the subject-matter of claim 1 of the main request would be novel over HE1.

- 1.3 With regard to the credibility of HE2, appellant 2 brought forward the following arguments:

HE2 is a statement by an inventor of HE1 reporting a gel content of 36% and a swelling index of 9.8 for example 1 of HE1. The methods to measure these properties are disclosed in HE2. They correspond to the methods mentioned in the opposed patent. As far as the swelling index is concerned, the method mentioned on page 2 of HE2 contains an obvious error, because the material cannot be dissolved in toluene at 280°C (toluene having a boiling point of about 110°C). In fact, it would be clear that a temperature of about 25°C was meant.

HE2 is based on the inventor's recollection of the data. This evidence is credible in view of the fact

that the inventor had been working on compositions having the same gel content and swelling index before the filing date of HE1, as shown in HE4 (see page 17, table 3).

1.4 Considering the opposing submissions of the parties, the main question to be answered is whether HE1 clearly and unambiguously discloses a composition having the following properties:

(i) a gel content of from 28 % to 36 % by weight and

(ii) a swell index of less than 13.

It is undisputed that document HE1 does not explicitly disclose the gel content and the swell index of the compositions described therein. Therefore, appellant 2 provided the declaration HE2 as evidence that the composition of example 1 of HE1 was implicitly characterised by:

(i') a gel content of 36% and

(ii') a swell index of 9.8.

The credibility of HE2 is however contested by the respondent.

1.5 According to the principle of free evaluation of evidence which has been consistently applied by the Boards (Case Law of the Boards of Appeal, 10th edition 2022, III.G.4.1 and 4.2), each piece of evidence is given an appropriate weighting according to its probative value. As the Enlarged Board of Appeal pointed out in G 3/97 (OJ 1999, 245, point 5 of the

Reasons) and G 4/97 (OJ 1999, 270, point 5 of the Reasons), "the principle of free evaluation would be contradicted by laying down firm rules of evidence defining the extent to which certain types of evidence were, or were not, convincing" (cited in G 1/12, OJ 2014, A114).

Therefore, it is for the Board to evaluate whether HE2 is credible and sufficient to prove that the compositions of HE1 were implicitly characterised by features (i) and (ii) taking into account what has been provided by the parties and considering the peculiarities of the case.

In the jurisprudence, the boards of appeal have held that the time between a declaration (here HE2) and an event at issue (here the filing of HE1 and the point in time in which the experiments disclosed therein were undertaken) may be a relevant criterion for the evaluation of the credibility and the precision of the said declaration (see Case Law of the Boards of Appeal, 10th edition 2022, III.G.4.2.1 c)). The Board agrees with the relevance of this criterion in the present case.

Appellant 2 clearly stated that the data provided in HE2 are based on the recollection of an inventor of HE1. Nothing different can be derived from the declaration. In view of the fact that

- a) the declaration HE2 was made in 2017, which is 25 years after the priority date of HE1,
- b) no evidence about stored data concerning example 1 of HE1 were provided, but only values based on a recollection 25 years later, and

b) the values reported in HE2 are very specific (accurate to the decimal point in terms of swell index)

the Board considers that the mere recollection of the values (without written evidence) is not sufficient as clear and unambiguous proof that the compositions of HE1 and in particular the one of its example 1 were characterised by the features (i) and (ii) as defined in claim 1. Even assuming that the recollections were based on archival documents, it would at least have been necessary to state this fact in the declaration by explaining the nature of the respective documents. In the absence of such an explanation about the source of the data indicated in the declaration and in the absence of any supportive evidence, they cannot be considered as sufficiently proven.

This conclusion is reached taking also into account the fact that the value reported for the gel content (36%) is at the upper limit of the range recited in claim 1. Thus even a small error in the recollection of this value could have the consequence that the gel content is within or outside the range defined in claim 1.

Furthermore, even if the method to measure the swell index is erroneous in HE2, the Board does not consider that the correction is obvious and sees no apparent justification for the allegedly incorrect temperature of 280°C to be 25°C. Also for this reason, HE2 does not clearly and unambiguously disclose a swelling index as defined in the opposed patent.

1.6 Appellant 2 referred to table 3 of HE4 as additional proof that the inventors of HE1 had been working on

similar compositions before the filing date of HE1. In particular, they pointed out that the experimental composition XZ95163.10 was characterised by a gel content of 36% and a swell index of 9.8, which were identical to the properties reported in HE2.

1.7 The Board notes that the compositions of HE1 are characterised by a Mw/Mn ratio of less than 2,5 while the experimental product of HE4 is characterised by a Mw/Mn ratio of 3.1 (see HE1, claim 1 and HE4, table 3). Hence, the experimental composition disclosed in HE4 does not fall within the scope of HE1, and it is therefore doubtful that other properties such as the swell index or the gel content should be identical. On the contrary, these data are more an indication that the recollections made 25 years later may refer to a different composition even if made in good faith.

1.8 For those reasons, the evidence on file is not considered to be sufficient to show that the compositions of HE1 and in particular the one of its example 1 were characterised by a swell index and a gel content as set out in claim 1. It follows that the subject-matter of claim 1 of the main request is novel over HE1.

2. Inventive step

2.1 Closest prior art

The parties consider that example 1 of HE1 is the closest prior art for the subject-matter of claim 1. The Board sees no reason to depart from this view.

2.2 Distinguishing features

The appellants hold that claim 1 differs from example 1 of HE1 only in that the composition comprises:

- i) 0.1-1 wt.-% of mineral oil as plasticiser.

As explained previously, the Board considers that the evidence on file is not sufficient to show that the composition of example 1 of HE1 was characterised by a swell index and a gel content as set out in claim 1 (see points 1.4 to 1.8 of the reasons).

It follows that, in accordance with the respondent's position, the subject-matter of claim 1 differs from example 1 of HE1 in that the composition comprises:

- i) 0.1-1 wt.-% of mineral oil as plasticiser (instead of 0 wt% in example 1 of HE1)

and is characterised by

- ii) a gel content of 28% to 36% by weight and
- iii) a swell index of less than 13.

### 2.3 Problem to be solved

2.3.1 The appellants take the view that example 1 of HE1 cannot be compared to the composition exemplified in the opposed patent.

2.3.2 The respondent considers that:

the examples provided in the opposed patent show that the reduction of the mineral oil content leads to an improvement of the mechanical properties without impairing the processability; consequently

the amount of material needed to prepare a refrigerator liner can be reduced;

the composition of example 1 of HE1 cannot be processed due to its low melt flow rate (MFR);

example 1 of HE1 cannot be reproduced, hence the respondent cannot provide a proper comparison with the closest prior art.

- 2.3.3 For the Board, the question to be answered is whether a technical effect can be inferred from the available experimental evidence that is related to the above-mentioned distinguishing features and in particular to the increase of the mineral oil content above 0,1 wt% (instead of 0 wt% in example 1 of HE1).

With regard to the experimental evidence in the opposed patent, it is pointed out that no example comprises less 0,1 wt% of mineral oil. Therefore, the effect of further reducing the amount of mineral oil below this limit value cannot be derived from the patent. Likewise a direct comparison between example 1 of HE1 and sample A of the opposed patent is not possible. In this respect, it is observed that the molecular weight and the particle size are not the same. Although the differences are not large, it cannot be ruled out that any technical effect derived from the comparison may originate in the molecular weight or the particle diameter instead of the distinguishing features i) to iii). Furthermore, as pointed out by appellant 2, the amount and nature of the rubber in sample A are not mentioned, which makes any comparison with the prior art pointless.

The respondent argued that the composition of example 1 cannot be processed. This is however not based on experimental evidence and is in contradiction to the teaching of HE1 according to which the composition of example 1 can be extruded and thermoformed to prepare a refrigerator liner (see HE1, page 7, lines 20-33).

With regard to the criticism that example 1 of HE1 cannot be reproduced, the following is noted:

According to established case law, the objective technical problem must be derived from effects directly and causally related to the distinguishing features of the claimed invention. In particular the comparison with the closest prior art has to show convincingly that the effect is attributable to the feature distinguishing the invention. The aim of such comparison is to demonstrate that the technical effect has its exclusive origin in the feature characterising the invention in the claims (see Case Law of the Boards of Appeal, 10th edition 2022, I.D.4.3.2).

Therefore, in the Board's view, it is not necessary to reproduce example 1 of HE1 to provide evidence of an effect. Instead the parties can show, by selecting suitable comparative tests, that the distinguishing features result in a technical effect.

Thus in the absence of suitable experimental evidence, the Board is of the opinion that the objective problem to be solved is to provide an alternative rubber reinforced polystyrene composition (HIPS).

#### 2.4 Obviousness



It remains to be seen whether it was obvious to the skilled person wishing to provide an alternative HIPS to use:

i) 0.1-1 wt.-% of mineral oil as plasticiser  
(instead of 0 wt% in example 1 of HE1)

and to adjust

ii) the gel content to 28% to 36% by weight and

iii) the swell index to less than 13.

2.4.1 According to the appellants, claim 9 of HE1 teaches that the amount of mineral oil may be increased to 0,5 wt%. Furthermore, the gel content is known to be about three times the quantity of rubber which would correspond to a gel content of 24-30 wt% for HIPS (see IB3, page 7, right-hand column, third paragraph). Likewise, the swell index, which is a measure of the cross-linking density, is usually below 13 (see IB5, page 35, figure 24 or D2, table 1).

Moreover the parameters i) to iii) and their effect on mechanical and processing properties of HIPS are well known in the art (see IB3, page 9, figure 5). It is therefore only common practice for the skilled person to adjust those parameters to achieve a suitable balance of properties.

2.4.2 The respondent contends that the cited documents provide no incentive for the combination of features of present claim 1. In particular, HE1 teaches away of increasing the crosslinking density and therefore to reduce the swell index (see page 3, lines 30-31). Furthermore it is clear from HE1 as a whole that the

composition should preferably be free of plasticiser (see page 3, lines 48-49).

The respondent further argues that the teaching of D2 (requiring at least 2 wt% of plasticiser) is incompatible with the teaching of HE1. The skilled person wishing to provide an alternative to the HIPS of HE1 would therefore not consider D2.

2.4.3 The Board considers that the alternative proposed in present claim 1 is obvious for the following reasons:

- (a) With regard to the distinguishing feature i), HE1 teaches that the amount of mineral oil may be less than 1 wt%, preferably less than 0,5 wt% (see page 3, lines 46-48 and claims 5 and 9). Although a most preferred embodiment of HE1 requires that no mineral oil is used, it is nevertheless an obvious option for a skilled person wishing to provide an alternative to the composition of example 1 of HE1, to select any alternative embodiment within the ambit of HE1 and in particular to use about 0,1 to 1 wt% of mineral oil as required by claim 1.
- (b) With regard to the distinguishing features ii) and iii), it is not contested that said features are not explicitly disclosed in HE1. It needs therefore to be assessed whether the skilled person would have considered to provide an alternative HIPS with these properties.

It is first pointed out that the swell index and the gel content are standard parameters which the skilled person routinely measures to characterise the properties of HIPS. The swell index is an indication of the rubber cross-linking density (as

shown in IB5, page 34, first full paragraph and page 35, figure 24) while the gel content corresponds to the percentage of insoluble fraction in the HIPS and is about three times the amount of rubber (see IB3, page 7, right-hand column, third paragraph). Furthermore, the effect of the cross-linking density (i.e. the swell index) and the rubber content (i.e. the gel content) on various mechanical and processing properties of the HIPS is common general knowledge (see IB3, page 9, figure 5). Already for that reason the Board considers that it is normal practice for the skilled person wishing to provide an alternative to the HIPS of HE1 to arbitrarily select a range of swell index and a range of gel content.

It remains to be seen whether the specific ranges recited in claim 1 are usual in the present technical field (and therefore whether the skilled person would have seriously contemplated working within said ranges).

According to IB3, HIPS have a rubber content of 8 to 10 wt% which implies that the gel content should be about 24 to 30 wt% (see IB3, page 7, right-hand column, third paragraph). Likewise D2 teaches that the gel content of a HIPS should be at least 28 wt% and in particular 33 wt% in the examples according to D2's invention (see D2, column 5, lines 61-63 and table 1, examples 1 and 2). Similarly it was not disputed that the HIPS "PS 2710" used as comparative example in the opposed patent was commercially available before the filing date of the patent application and was characterised by a gel content of 32 wt% (see opposed patent, paragraph [0068]). These considerations show that

the selected gel content range of 28 to 36 wt% was standard in the field of HIPS before the filing date of the opposed patent.

Similarly IB5 shows that the swell index of a HIPS can easily be adjusted to less than 13 by controlling the curing time and temperature (see page 35, figure 24). D2 teaches that HIPS may have a swell index in the range of 8,2 to 12,7 (see D2, table 1). Also the commercial HIPS "PS 2710" is characterised by a swell index of 12. It can therefore be concluded that the selected swell index of less than 13 was usual in the field of HIPS before the filing date of the opposed patent.

(c) It follows that it was obvious for the skilled person wishing to provide an alternative to the HIPS of example 1 of HE1 to use:

i) 0.1-1 wt.-% of mineral oil as suggested by HE1

and to adjust

ii) the gel content to 28% to 36% by weight and  
iii) the swell index to less than 13 because these ranges corresponded to standard properties of HIPS before the filing date of the patent.

(d) Finally, it was not disputed by the parties that the skilled person would have no difficulty in preparing a HIPS according to present claim 1.

(e) The alternative proposed in claim 1 of the main request is therefore obvious over HE1 as the closest prior art.

Auxiliary request AR1

3. Inventive step

3.1 Claim 1 of auxiliary request AR1 differs from claim 1 of the main request in that:

the dispersed rubber particles have an average particle diameter of from **7** to 10 microns,

the composition has a gel content of from **29** % to **35** %.

3.2 During oral proceedings, it was not disputed that claim 1 of auxiliary request AR1 differs from example 1 of HE1 in that the composition comprises:

i) 0.1-1 wt.-% of mineral oil as plasticiser (instead of 0 wt% in example 1 of HE1)

and is characterised by

ii) a gel content of 29% to 35% by weight,

iii) a swell index of less than 13, and

iv) an average rubber particle diameter of from 7 to 10 microns (instead of 6 microns in example 1 of HE1).

3.3 The respondent considered that the combination of features i) to iv) was not obvious in view of the prior art.

3.4 The Board does not share the respondent's view for the following reasons:

(a) As no additional arguments were presented with respect to the presence of an effect and the problem solved (in particular no arguments with respect to an effect of the particle size range as additional distinguishing feature or to the further limitation of the gel content), the problem solved remains the one formulated for the main request above (see point 2.3.3).

(b) With regard to the obviousness of the distinguishing features i) to iii), the above considerations apply *mutatis mutandis* to claim 1 of auxiliary request AR1 (see point 2.4.3 of the reason).

(c) As to the rubber particle size, HE1 discloses that it may be selected between 4 and 10 microns and preferably between 5 and 8 microns (see claims 3 and 4). The choice of a sub-range of 7 to 10 microns (distinguishing feature iv)) is therefore obvious in view of HE1 itself when looking for an alternative.

3.5 Therefore, claim 1 of auxiliary request AR1 does not involve an inventive step over HE1.

Auxiliary request AR2

4. Inventive step

4.1 Claim 1 of auxiliary request AR2 differs from claim 1 of the main request in that:

the dispersed rubber particles have an average particle diameter of from **7** to **9** microns,

the composition has a gel content of from **29** % to **34** % and

the amount of plasticizer is at least **0.5** wt% and no more than 1 wt%.

4.2 During oral proceedings, it was not disputed that claim 1 of auxiliary request AR2 differs from example 1 of HE1 in that the composition comprises:

i) 0.5-1 wt.-% of mineral oil as plasticiser (instead of 0 wt% in example 1 of HE1)

and is characterised by

ii) a gel content of 29% to 34% by weight,

iii) a swell index of less than 13, and

iv) an average rubber particle diameter of from 7 to 9 microns (instead of 6 microns in example 1 of HE1).

4.3 The respondent did not provide additional arguments as to the presence of an effect so that the problem solved remains the one formulated for the main request above (see point 2.3.3). They, however, argued that HE1 would teach away from selecting a mineral oil content of at least 0,5 wt%.

4.4 The Board does not share the respondent's view for the following reasons:

(a) As pointed out previously, HE1 discloses that the amount of mineral oil in HIPS compositions may be less than 1 wt% (see claim 5). Although the most preferred embodiment of HE1 requires that no mineral oil is used, it is nevertheless an obvious option for a skilled person wishing to provide an alternative to the composition of example 1 of HE1 to select any embodiment within the ambit of HE1 and in particular to use 0,5 to 1 wt% of mineral oil as required by claim 1.

(b) With regard to the other distinguishing features, the above considerations apply *mutatis mutandis* to claim 1 of auxiliary request AR2 (see points 2.4.3 and 3.4 of the reasons).

4.5 Therefore, claim 1 of auxiliary request AR2 does not involve an inventive step over HE1.

#### Auxiliary request AR3

5. Inventive step

5.1 Claim 1 of auxiliary request AR3 differs from claim 1 of auxiliary request AR1 in that the composition is characterised by a swell index of **at least 2** and of less than **10**.

5.2 During oral proceedings, it was not disputed that claim 1 of auxiliary request AR3 differs from example 1 of HE1 in that the composition comprises:

- i) 0.1-1 wt.-% of mineral oil as plasticiser (instead of 0 wt% in example 1 of HE1)

and is characterised by



- ii) a gel content of 29% to 35% by weight,
- iii) a swell index of **at least 2** and of less than **10**, and
- iv) an average rubber particle diameter of from 7 to 10 microns (instead of 6 microns in example 1 of HE1).

5.3 According to the respondent, the reduction of the swell index below 10 leads to an improved environmental stress crack resistance (ESCR) of the HIPS (see opposed patent, paragraphs [0070] and [0071]). Furthermore, it would not be obvious for the skilled person wishing to improve the ESCR, to reduce the swell index.

5.4 The Board does not share the respondent's view for the following reasons:

- (a) As pointed out by the appellants, IB3 represents the common general knowledge in the field of HIPS. Figure 5 of IB3 on page 9 shows a summary of relationships between the mechanical and processing properties of HIPS and the HIPS's chemical structure. In particular, Figure 5 shows that it is known that the ESCR may be increased by increasing the crosslinking density of the HIPS and therefore by decreasing the swell index (see IB5, page 34, second paragraph). This effect is also recognised as known by the opposed patent (see paragraph [0004]). Based on the common general knowledge, it was therefore an obvious option for a skilled person wishing to increase the ESCR of the HIPS to reduce the swell index.

(b) With regard to the other distinguishing features, the above considerations apply *mutatis mutandis* to claim 1 of auxiliary request AR3 (see points 2.4.3 and 3.4 of the reasons).

5.5 Therefore, claim 1 of auxiliary request AR3 does not involve an inventive step over HE1.

6. Since none of the requests of the respondent is allowable, there is no need to deal with any other issue and the patent is to be revoked.

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



B. ter Heijden

D. Semino

Decision electronically authenticated