

**Internal distribution code:**

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

**Datasheet for the decision  
of 21 May 2008**

**Case Number:** T 0859/06 - 3.3.03

**Application Number:** 98943014.5

**Publication Number:** 1022308

**IPC:** C08L 23/12

**Language of the proceedings:** EN

**Title of invention:**  
Polypropylene composition

**Patentee:**  
Chisso Corporation

**Opponents:**  
Novolen Technology Holdings C.V.  
Basell Polyolefine GmbH

**Headword:**

-

**Relevant legal provisions:**  
EPC Art. 54, 83, 84, 123(2)

**Relevant legal provisions (EPC 1973):**

-

**Keyword:**

"Novelty (yes)"  
"Novelty - evidence - incorrect reproduction of prior art"  
"Disclosure - enabling"  
"Remittal for further prosecution"

**Decisions cited:**

T 0182/89, T 0225/93, T 0793/93, T 0960/98

**Catchword:**

-



Case Number: T 0859/06 - 3.3.03

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.03  
of 21 May 2008

**Appellant:** Chisso Corporation  
(Patent Proprietor) 6-32, Nakanoshima 3-chome,  
Kita-ku  
Osaka-shi,  
Osaka-fu 530-0005 (JP)

**Representative:** Müller-Boré & Partner  
Patentanwälte  
Grafinger Straße 2  
D-81671 München (DE)

**Respondents:** Novolen Technology Holdings C.V.  
(Opponent) Oostduinlaan 75  
NL-2596 JJ The Hague (NL)

**Representative:** Best, Michael  
Lederer & Keller  
Patentanwälte  
Prinzregentenstraße 16  
D-80538 München (DE)

(Opponent) Basell Polyolefine GmbH  
Brühler Straße 60  
D-50389 Wessling (DE)

**Representative:** Sacco, Marco  
Basell Poliolefine Italia S.r.l.  
Intellectual Property  
P.le Privato G. Donegani, 12  
Casella Postale 19  
I-44100 Ferrara (IT)

**Decision under appeal:** Decision of the Opposition Division of the European Patent Office dated 8 March 2006 and posted 3 April 2006 revoking European patent No. 1022308 pursuant to Article 102(1) EPC.

**Composition of the Board:**

**Chairman:** C. Idez  
**Members:** M. C. Gordon  
H. Preglau

## Summary of Facts and Submissions

I. Mention of the grant of European Patent No. 1 022 308 in the name of Chisso Corporation, in respect of European patent application No. 98943014.5 filed on 17 September 1998 and claiming priority of the earlier Japanese patent application 25368897 dated 18 September 1997 was announced on 7 January 2004 (Bulletin 2004/02). The patent contained two sets of claims: one set for the contracting state DE, and one set for the contracting states BE and FR, both sets comprising 11 claims. Claim 1 of the set of claims for the contracting state DE read as follows:

"1. A polypropylene composition comprised of 20-95% by weight of a polypropylene defined in the following [I] and 5-80% by weight of a propylene- $\alpha$ -olefin copolymer defined in the following [II]:

[I] a polypropylene featured by having:

- (1) a ratio of isotactic pentad (mmmm) is 0.900 - 0.949,
- (2) the 2,1- and 1,3-propylene units in the polymer chain is 0.2-1.0 mole %,
- (3) a weight average molecular weight (Mw) is 40,000 - 1,000,000,
- (4) a ratio of a weight average molecular weight (Mw) to a number average molecular weight (Mn), i.e. (Mw)/(Mn) is 1.5-3.8, and
- (5) in case of elevating the temperature of o-dichlorobenzene continuously or stepwise up to given temperatures to measure the amount of eluted polypropylene at each temperature, the position of a main elution peak is 95-110°C and the amount of components existing in the range of  $\pm 10^\circ\text{C}$  of the main elution

peak is at least 90% of the total amounts of components eluted at temperatures higher than 0°C, and

[II] a propylene- $\alpha$ -olefin copolymer containing 10-90% by weight of a constituent derived from propylene and 10-90% by weight of a constituent derived from  $\alpha$ -olefin other than propylene."

Claim 1 of the set of claims for the contracting states BE and FR differed from the claim for DE in that in feature [I].(2) of claim 1 the permissible range of 2,1- and 1,3- propylene units in the polymer chain was specified as being 0-1 mole %.

Claims 2-11 of both sets were identical and were directed to preferred embodiments of the polypropylene composition of the respective claims 1. *Inter alia* claim 3 specified that the melting point (T<sub>m</sub>) of the polypropylene [I] was from 147-160°C.

- II. Notices of opposition to the patent were filed by Novolen Technology Holdings C.V. (OI) and by Basell Polyolefine GmbH (OII), both oppositions being filed on 7 October 2004.
- OI invoked the grounds of opposition pursuant to Art. 100(a) EPC (Art. 54 and 56 EPC). OII invoked the grounds of opposition pursuant to Art. 100(a) (Art. 54 and 56 EPC) and (b) EPC.
- The opponents cited *inter alia* the following document in support of the opposition:
- D1: EP-A-576 970.

During the course of the opposition proceedings a number of experimental reports were submitted by the parties, in particular:

- "A Certificate of Experimental Results" submitted by the patentee together with the letter dated 13 May 2005, i.e. the response to the notices of opposition and
- D23 submitted by Opponent I with a letter dated 9 January 2006.

D23 itself cited a number of other documents, designated "ER1" to "ER6", *inter alia*:

ER6: Excerpt from a Perkin Elmer DSC7 manual.

In its submissions with respect to Art. 100(b) EPC OII objected *inter alia* to the failure in the patent to specify the sample amount to be employed for the determination of the melting point (claim 3 of the patent as granted) and provided evidence that this affected the result of the determination of the melting point.

During the course of the opposition proceedings an amended set of claims was submitted with the aforementioned letter dated 13 May 2005, i.e. the rejoinder to the notices of oppositions. A single set of 10 claims for all contracting states was submitted, based on the set of claims as granted for DE. Claim 1 of this set of claims differed from the set of claims for DE as granted in two respects. Firstly, the upper limit for feature [I].(2) was amended to 0.5. Secondly, a further feature was added to part [I] of claim 1, i.e. the part of the claim relating to the polypropylene component:

"(6) the melting point is ranging from 152°C to 158°C".

As a consequence claim 3 as granted was deleted (compare section I above) and the subsequent claims renumbered and the appendancies adapted where necessary. In the discussion of novelty during the opposition procedure the principal question was whether in the composition of example 16 of D1, which also related to a two component polypropylene composition, the melting point of the homopolypropylene component thereof, i.e. the component corresponding to polypropylene [I] of the operative claims, was within the range specified in the operative claims.

The aforementioned D23 was submitted in view of this debate. According to this report, the first part of the two-stage process exemplified in example 16 of D1 was repeated and the properties of the resulting polypropylene homopolymer determined.

A significant aspect of this debate concerned the method for determining the melting point, in particular the amount of sample to employ.

III. In a decision announced orally on 8 March 2006 and issued in writing on 3 April 2006 the opposition division revoked the patent.

The decision was based on the above mentioned set of claims submitted with letter dated 13 May 2005. A set of claims submitted on equal date as an auxiliary request was withdrawn at the oral proceedings before the opposition division.

(a) With respect to Art. 123(2) and (3) EPC it was held that the specified content of 2,1 and 1,3-propylene units (feature 2) and the specified melting point ranging from 152°C to 158°C (newly introduced feature 6) were disclosed on page 6

line 23 and page 7 line 16 respectively of the application as filed and therefore met the requirements of Art. 123(2) EPC.

- (b) With respect to the objection pursuant to Art. 83 EPC concerning the determination of the melting point, the decision held that the patent in suit specified the apparatus and conditions to be employed. Although the amount of sample to be used was not expressly mentioned it was held to be common general knowledge to use 5mg of a sample of polypropylene.
- (c) With respect to Art. 54 EPC the decision held that D1 described polypropylene compositions obtained in a two stage polymerisation process using catalyst systems as those of the patent in suit. Example 16 of D1 described a polypropylene composition containing a mixture of a polypropylene homopolymer prepared in a first stage and a propylene/ethylene copolymer obtained in the second stage, The ratio of the two being 69 wt% to 31 wt%. This example had been repeated as reported in D23 with the exception that the reaction had been run at a lower scale and that only the first stage of the polymerisation had been carried out. In line with submissions made by the patentee in the "Certificate of Experimental Results" and by the opponent I in D23, the decision held that the second stage of the polymerisation could be omitted since the measurement of the physical properties of the polypropylene obtained at the first stage was necessary. The experimental report D23 showed that employing the heating/cooling cycle specified in paragraph [0032] of the patent in suit and a



sample of 2 mg the polypropylene polymer of example 16 of D1 gave a melting point of 157°C. When employing a sample of 5 mg a melting point of 158°C was recorded. Both values were within the range specified in operative claim 1. The experimental report showed that also the other features [I].(1)-[I].(5) of operative claim 1 were satisfied (compare section I above).

Accordingly the polymer of example 16 of D1 had all the parameters [I].(1) to [I].(6) specified in operative claim 1.

(d) As a consequence the patent was revoked.

IV. A notice of appeal against this decision was filed on 2 June 2006, the appeal fee being paid on the same date.

V. The statement of grounds of appeal was submitted by the patentee, now the appellant, with a letter dated 31 July 2006.

The main request was maintained and the former auxiliary request resubmitted as first auxiliary request. A further set of claims forming a second auxiliary request was also submitted. The text of these auxiliary requests is not of significance for the present decision.

(a) With respect to Art. 123(2) and (3) EPC it was held that no additional comments were necessary.

(b) With regard to Art. 83 EPC likewise it was held that no further comments were necessary.

(c) With respect to novelty it was submitted that according to the disclosure of D1, example 16 the polypropylene component of the polymer composition had a melting point of 159°C. It was submitted that the melting point of D1 had been determined

in accordance with the understanding and common knowledge of the skilled person at the priority date of D1. The priority date of D1 and that of the patent in suit differed only by some years. Hence it seemed plausible that the melting points according to D1 and the patent in suit had been measured in a similar and comparable manner based on common knowledge of the person skilled in the art.

Specifically it was submitted that opponent I when carrying out the repetition of example 16 of D1 reported in D23 had employed an instrument for determining the melting point which would not have been available to the inventors of D1 (or those of the patent in suit). It was however necessary to employ an instrument having the capabilities typical of those available at the relevant date(s). In this connection it was submitted, in agreement with the position taken by the opposition division, that the skilled person would routinely employ 5mg of a sample for the determination of the melting point.

In summary, the opponents had purposively selected measurement conditions with the intention of obtaining a desired result, i.e. melting point for example 16 of D1 within the scope of the operative claims.

- (d) Submissions were also made with respect to inventive step which however are not of relevance for the present decision.

VI. Opponents OI and OII, now respondents I and II responded with letters dated 19 February 2007 and 7 December 2006 respectively.

Both respondents requested dismissal of the appeal. Respondent II further requested that, in the case of a finding that the main requests or the auxiliary requests were novel, that the case be remitted to the opposition division for consideration of inventive step.

(a) With respect to Art. 123(2) EPC it was submitted that although the two features of the content of 2,1- and 1,3-propylene and the melting point were disclosed individually in the application as filed, these features were not disclosed in combination. Accordingly this constituted new subject matter.

(b) With respect to Art. 83 EPC it was submitted that the apparatus employed for melting point measurement did not affect the measured value. It was submitted as being uncontested that the measured melting point value strongly depended on the amount of sample employed. It was disputed that it was common general knowledge to use a sample mass of 5mg when employing the instrument referred to in the patent in suit ("DSC7"). It was submitted, with reference to the documents ER1-ER6 submitted together with the aforementioned D23, that there was no single "correct" amount to use, but rather that consistently ranges of amounts were disclosed. In particular ER6 - the operating manual for the "DSC7" apparatus - did not specify an amount of sample to be employed.

Due to the failure to specify the sample amount to use the patent in suit did not meet the requirements of Art. 83 EPC.

(c) With respect to novelty reference was made to D1, and the experimental report D23. The discussion concerning melting point determination indicated above was in particular emphasised. The precise

details of these submissions are however not relevant for the present decision.

(d) Submissions were also made with respect to inventive step which are not relevant for the present decision.

VII. On 20 December 2007 the Board issued a summons to attend oral proceedings.

VIII. In a letter dated 18 April 2008 the appellant submitted set of claims forming a third auxiliary request the details of which are not of relevance to the present decision.

Further submissions were made *inter alia* with respect to the determination of the melting point and the instruments to be employed, the details of which, however are not of relevance for the present decision.

IX. With a letter dated 14 May 2008 Respondent I made further submissions concerning the determination of the melting point, the details of which are not of relevance to this decision.

X. Oral proceedings were held before the Board on 21 May 2008.

(a) At the start of the oral proceedings the Board indicated that it was necessary to consider in more detail the disclosure of example 16 of D1 and the relation thereto of the experimental data submitted as D23. In particular D1, example 16 disclosed a two-step process. In the first step a single monomer was present, whereas in the second step a second monomer was introduced. The question to be answered was whether the product of the

first step remained unchanged in the second step. In particular it was noted that according to example 16 of D1 the first step employed propylene as the monomer. At the end of the first step, the pressure of this was reduced and the second monomer (ethylene) added. There was thus a transition from the first polymerisation to the second polymerisation but not an interruption. The respondents submitted that at the reduced pressure of propylene there would be nearly no reaction. The respondents further submitted that the procedure of example 16 of D1 was identical to that employed according to the examples of the patent. The homopolymer produced in the first step would not be changed by the second step. This homopolymer formed a matrix with the copolymer of the second step dispersed therein. It was possible to separate the two polymers and thereby establish that the homopolymer of the first step was not modified. Some catalyst remained at the end of the first step which started a new chain when the second monomer (ethylene) was introduced. At the end of the first step two populations of polymer molecules would be present. One population would have no residual catalyst and would remain unchanged. The second population would have some catalyst units. These chains would proceed to react to form block copolymers. The respondents further submitted that the melting point reported in D1 was determined after the first step although it was acknowledged that this was not entirely clear from the text of D1. It was further submitted that the question of whether the polymer of the first step became changed in the second

step applied equally to the patent and to D1. It was submitted that no experiments had been done to investigate whether the polymer of the first step did in fact remain unchanged throughout the second step.

The appellant submitted that in the process disclosed in the examples of the patent in suit there was a clear termination of the first step. The monomer was released at the end of the first step and the system flushed with inert gas. This would lead to two distinct populations of polymers. In contrast thereto in the process of D1 there was no clear difference between the two steps. This rendered it doubtful that the polymers of D1 example 16 and the patent were the same. It was disputed that the reaction of D1 would stop at the reduced pressure. On the contrary, it was considered that it would continue but at a slower rate. Thus due to the process of D1 it was excluded that the product of the first step remained unchanged throughout the second step.

Following deliberation the Board announced its conclusion that, contrary to the statements made by the appellant and the respondents in their respective experimental reports ("A Certificate of Experimental Results" and D23 - see section II above) it was not credible that the intermediate product of example 16 of D1 remained unchanged throughout the second stage of the process disclosed. Thus it could not be concluded that the properties determined for the product of the first step were the same as those of the corresponding - "homopolymer" - fraction in the final product.

The consequence of this was that the data reported in experimental report D23 did not reflect the properties of the polypropylene (homopolymer) fraction in the final composition of example 16 of D1. Accordingly this evidence was not relevant for consideration of novelty.

- (b) With respect to novelty the respondents submitted that since the operative claim employed the term "comprising" and since it had been shown in D23 that the first stage polymer of D1 had the features required there would inevitably be a proportion of this polymer present remaining in the end product of D1, with the consequence that novelty would still have to be denied. The presence of other polymers not meeting these requirements did not affect this conclusion. The appellant submitted that claim 1 was directed to a composition with 2 components having specified features and being present in a defined ratio. This combination of features and ratios was not disclosed by any documents. There was no evidence that in the final polymer of example 16 of D1 the ratios of the different polymers would be in the range required by operative claim 1.

After deliberation the Board announced its conclusion that the subject matter of the claims of the main request was novel.

- (c) With respect to Art. 123(2) EPC the respondents referred to the written submissions, and in particular emphasised that there was no disclosure of the combination of the two features objected to (see section VI.(a) above).

The appellant referred to paragraph [0031] of the patent in suit which indicated that there was a link between the features in question.

(d) With regard to Art. 83 EPC the respondents presented three lines of argument:

- The claimed subject matter was defined by parameters which related to intermediates, not the end product. The examples in the patent reported the properties of said intermediates. It was not sufficiently disclosed how it could be ascertained if the values determined for the intermediate were also retained in the final product. As discussed with respect to D1 the properties of the intermediate could change in the course of the further reaction.
- The failure to specify the amount of sample to be used for the melting point determination and the absence of any generally applicable guideline in the art meant that the invention was not sufficiently disclosed. In particular it was again disputed that the skilled person would, as a matter of course, inevitably employ a sample amount of 5mg as submitted by the appellant.
- The patent disclosed only one example in which the properties of the intermediate polypropylene had been determined. There was no information how to modify the reaction parameters and conditions in order to obtain other compositions within the scope of the claims. In this context the respondents



submitted that it was impossible to provide evidence in support of this objection beyond that provided by the lack of information in the patent.

The appellant submitted with regard to the first and third arguments that the patent disclosed how to obtain polymers having the required properties and that all information was given by the examples of the patent. The teaching in the patent could be followed. According to the established case law, it was necessary only to show a single way of obtaining the claimed subject matter. In any case propylene polymerisation was a known established technology and the skilled person would be aware of how to adjust the process conditions in order e.g. to modify properties such as the content of misinsertions, the molecular weight etc. Regarding the question of identity between the polymer of the intermediate step and that of the corresponding component in the final product it was disputed that this was a matter regulated by Art. 83 EPC. In any case the patent did not require that these properties remained unchanged. What was necessary that the patent provided sufficient teaching to obtain the claimed product which, it was submitted, it did.

With regard to the second argument relating to the melting point determination it was submitted that D1 did not provide a complete description of this determination; hence it was impossible to decide whether this property disclosed for the products of D1 was novelty destroying for the subject

matter of the operative claims. It was further submitted that the skilled person would, with the specified instrument, in most cases use a sample amount of 5mg. The other conditions were disclosed in the patent.

Following deliberation the Board announced that the patent in suit met the requirements of Art. 83 EPC.

- (e) With respect to inventive step respondent I requested, in agreement with the written submissions of respondent II (see section VI above) that the case be remitted to the first instance for consideration of this matter. The appellant did not comment on this aspect.

XI. The appellant (patentee) requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request submitted with letter dated 13 May 2005, or in the alternative on the basis of the first auxiliary request submitted with letter dated 13 May 2005, on the basis of the second auxiliary request submitted with letter dated 31 July 2006 or on the basis of the third auxiliary request submitted with letter dated 18 April 2008.

The respondents (opponents) requested that the appeal be dismissed. In the alternative respondent II requested, that, in the case of a finding that the subject matter of the patent is novel that the case be remitted to the first instance for consideration of inventive step.

Respondent I also requested remittal of the case to the first instance.

## **Reasons for the Decision**

1. The appeal is admissible.
  
2. *The teaching of D1 - the evidence submitted*
  - 2.1 As is apparent from the presentation of the case in the Facts and Submissions above a central element is the teaching of D1 example 16, and in particular the relationship of this example to the claimed subject matter.
  
  - 2.2 According to the text of the example (starting at page 25 of D1) after pressurising the reaction vessel with propylene, adding liquid propylene and the required catalyst components polymerisation is conducted for 5 hours at 50°C. The pressure was then reduced to 3 bar and ethylene added. Thereby the pressure increased to 8 bar and the polymerisation was continued at 40°C for 14 hours.

It is reported that the ratio of the homopolymer and copolymer components, i.e. the products of the first and second stages respectively, was determined by fractionation. It is also reported that the polymer of the first stage, i.e. the homopolymer fraction had a melting point of 159°C. However it is not stated in D1 whether the reported melting point was determined on a portion of the product that was present in the reactor after completion of the first stage i.e. the intermediate product obtained prior to addition of ethylene monomer, or whether this was determined after the reported fractionation of the final product. The

further properties [I].(1)-[I].(5) of operative claim 1 are not reported in D1.

- 2.3 In the evidence advanced by the respondent/opponent I in document D23 the first stage of this example of D1 was repeated, however at a lower scale (5 litre reaction vessel rather than 150 litre reaction vessel). It has not been submitted by the appellant that this was not a faithful and correct repetition of the first stage of D1. Nor has the Board any concerns of its own in this respect.

The properties of the product of this repetition of the first stage were determined. The second stage however was not carried out.

- 2.4 During the opposition proceedings there appeared to be consensus that it was sufficient to carry out only the first stage of the reaction. This was stated by the patentee on page 3 of the "Certificate of Experimental Results" submitted together with the response to the notices of opposition, which reasoning was concurred with in D23, submitted by opponent/respondent I.

Underlying this consensus therefore is an assumption that the product of the first stage of the process of example 16 of D1 would remain unchanged throughout the second stage of the reaction.

- 2.5 There is however no evidence to suggest that this assumption is valid. As noted above, in the process of D1 there are in fact no clearly distinct "first" and "second" stages. On the contrary there is what might be termed a "modulated" polymerisation process which continues while the monomer composition is adjusted. This would mean that while potentially a proportion of the molecules produced in the first stage would no longer be capable of reacting at the time of the transition to the second stage, in particular at the

point when the propylene pressure is reduced, there would be a proportion which would still be reactive throughout the period of pressure reduction and subsequently when ethylene is introduced.

The consequence of this is that the properties determined for the product present in the reaction vessel at the "conclusion" of the "first stage" would not necessarily and inevitably be representative of the properties of this fraction of the polymer composition after conclusion of the second stage. This is without even considering the possibility of further reactions of the product of the first stage arising from the exposure to the pressure and temperature conditions within the reactor throughout the second stage.

- 2.6 In this connection it is recalled that in ascertaining the disclosure of a prior art document, and in particular the outcome of an express literal disclosure, the case law of the EPO requires a very high standard of proof, namely that of "beyond all reasonable doubt" (T 793/93 27 September 1995, not published in the OJ EPO). Any grey area or uncertainty in what is the inevitable outcome of carrying out the teaching of a disclosure means that the case of anticipation based on this document must fail.

As explained above there exists such a grey area in the case of D1 in respect of the final constitution of the product produced in the first stage.

- 2.7 Accordingly it must be concluded that the evidence advanced by the respondent/opponent in the form of D23 does not demonstrate to any extent, let alone to the required standard of proof of "beyond all reasonable doubt", what the properties of the product of the first polymerisation stage in the final product would be.

2.8 The consequence is that this evidence must be disregarded.

3. *Novelty*

3.1 The only document cited against novelty of the claims of the main request was example 16 of D1.

3.2 Although additional data were submitted during the course of the opposition proceedings with respect to this document, for the reasons explained in section (2) above these data must be disregarded.

3.3 As indicated above, example 16 of D1 discloses the preparation of a polypropylene composition in a multistage process. In a first step a propylene homopolymer is prepared. In the subsequent course of the reaction ethylene is introduced.

3.4 The only property reported for the homopolymer phase (polymer of the first stage) in example 16 of D1 is the melting point which is 159°C. Assuming for the sake of argument that this melting point is in fact that of the homopolymer phase after fractionation, i.e. the product extracted after completion of both stages of the reaction and not that of the intermediate product (see section 2.2 above), the following conclusion can be drawn. The reported melting point (i.e. 159°C) is outside the range of 152-158°C defined according to feature [I].(6) of operative claim 1.

There is, further, no disclosure in respect of the other features [I].(1)-[I].(5) specified in operative claim 1.

3.5 Accordingly D1 does not disclose the subject matter of operative claim 1 of the main request, or, consequently of claims 2-10 which are dependent thereon.

3.6 The subject matter claimed according to the main request is therefore novel.

4. *Art. 123(2) EPC.*

4.1 This objection related to the specification in claim 1 of the content of 2,1- and 1,3-propylene units being 0.2-0.5 mol% (feature [I].(2)) and the melting point ranging from 152 to 156°C (feature [I].(6)) (see section VI.(a) above).

4.2 It is not disputed that each of these features is disclosed individually in the application as filed. The content of 2,1 and 1,3-propylene units is disclosed, as a "more preferably" feature in paragraph [0024] of the published application and the melting point range is disclosed, also as "more preferably" in paragraph [0029] of the published application.

4.3 It is also disclosed in aforementioned paragraph [0029] that the melting point is a consequence of the "characteristic factors for polypropylene according to the present invention, especially the characteristic factors (1) and (2)". Accordingly this passage establishes a link between "characteristic factor" (2), i.e. the content of 2,1- and 1,3- propylene units and the melting point.

4.4 The operative claim thus defines these two features as taking values which are disclosed in the application as filed as being at the same level of preference, i.e. "more preferably".

The further feature - which as explained above is also one of those disclosed to "especially" influence the melting point (published application, paragraph [0029])- is the ratio of isotactic pentad (mmmmm). The value specified for this feature in the operative claim corresponds to the most general range disclosed for this feature in the application (0.900-0.949).

4.5 Accordingly the melting point is presented in the application as being dependent on and derived from other features. The fact that one of these features is restricted compared to the broadest permissible range thus, according to the disclosure of paragraph [0029] of the published application, imposes a corresponding restriction on the melting point. This restriction, and thereby the link between these properties, is reflected in the specified value of the melting point in the operative claim. Specifically, the range of values to which the melting point is restricted is at the same degree of preference as the range specified for the content of 2,1- and 3,1-propylene units ("more preferably").

4.6 Consequently it must be concluded that the combination of melting point and content of 2,1- and 1,3-propylene units specified in operative claim 1 does not extend beyond the content of the application as filed.

4.7 Accordingly the operative claims meet the requirements of Art. 123(2) EPC.

5. *Art. 83 EPC*

The respondents objections under Art. 83 EPC were based on the arguments that (see also section X.(d) above):

- the compositions according to claim 1 were defined in terms of properties of intermediate products and that it would not be possible to ascertain whether these properties were retained in the final product;
- the patent in suit did not specify the amount of sample to employ for determining the melting point of the component (I), and hence the skilled person would not know whether a given



polypropylene composition fell within the scope of claim 1;

- the patent in suit contained only a single example in which the properties of the intermediate product had been determined and there were no instructions how to modify this teaching in order to arrive at other compositions according to the invention.

5.1 Concerning the first argument the Board however observes that claim 1 of the patent in suit is directed to a polypropylene composition comprising a polypropylene homopolymer (I) and a propylene copolymer with an  $\alpha$ -olefin (II) characterised in particular by features concerning the homopolymer (I).

In that context, methods of separation of the components (I) and (II) in the composition are, in the Board's view within the knowledge of the skilled person (e.g. fractionation - cf. D1, example 16) so that the features of the homopolymer component in the claimed composition can be determined by the methods indicated in the patent in suit (cf paragraphs [0022], [0023], [0025], [0028], [0032], [0035]).

While it is true that in the examples of the patent in suit the properties of the homopolymer were determined at the end of the first stage, no experimental evidence has been submitted by the respondents which shows that in the specific process of these examples the properties of the homopolymer obtained in the first stage are not retained throughout the second stage. Even if the properties of the homopolymer component were to change during the second stage it has not been shown by the respondents that it would not be possible nevertheless to determine the properties of this component in the final composition e.g. by employing

fractionation to separate the two components as taught in example 16 of D1.

Accordingly the first objection must fail.

- 5.2 Concerning the second objection, while in view of the lack of indication of the sample amount for the determination of the melting point by DSC it might have been questionable as to whether the claimed invention was correctly defined in accordance with Art. 84 EPC, the Board has no power to decide on this issue in view of the fact that the claims as granted (claim 3) already contained a reference to the melting point of component (I).

In the Board's view a distinction should be made between the requirements of Art. 84 EPC and those of Art. 83 EPC. In particular, with respect to sufficiency of disclosure the relevant question is whether the patent in suit provides sufficient information to enable the skilled person, taking into account common general knowledge, to reproduce the invention (T 960/98, 9 April 2003, not published in the OJ EPO, Reasons point 3.2.1).

In this connection, the Board also concurs with the considerations made in the part 3.8.3 of T 960/98 in respect of the concept developed in the point 17 of the reasons of decision T 256/87 (26 July 1988, not published in the OJ EPO) according to which a person skilled in the art had to know "when he is working within the forbidden area of the claims". According to T 960/98 this concept of "forbidden area" was associated with the boundaries of the claimed subject matter, i.e. the scope of the claims. This was however a matter relating to the clarity of the claims within the meaning of Art. 84 EPC rather than sufficiency of disclosure.

However, the question at stake in the present case is not that of the boundaries of the claimed subject matter but rather whether the absence of an indication in claim 1 of the sample amount to be employed in the determination of the melting point amounts to an undue burden for the skilled person trying to reproduce the invention (cf T 225/93, 13 May 1997, not published in the OJ EPO, reasons 2.3).

In that respect it would firstly appear in view of document ER6 - an excerpt from the manual for the "DSC7" apparatus employed in the examples of the patent in suit - that the sample amount to be employed with this instrument should be between 0.5 and 30mg (ER6, section 7.4). The scanning rate, i.e. rate of temperature change is disclosed as being between 0.1 and 500°C/minute (ER6, section 7.7). In the aforementioned section 7.4 of ER6 it is further taught that running a small sample at a slow scanning rate improves the peak resolution. The scanning rate disclosed in paragraph [0032] of the patent in suit is 30°C/minute for the heating phase and -20°C/minute for the cooling phase of the DSC measurement, both of which are at the lower end of the range disclosed in ER6. Accordingly ER6 gives some guidance with respect to the appropriate sample amount and gives guidance regarding how to increase the precision of the measurement, referring in this connection explicitly to the effect of the sample amount.

In any case the degree of uncertainty which might still remain in the determination of the melting point would be further reduced to a level which, in the Board's

view is not detrimental to the sufficiency of disclosure by the complementary knowledge of features (1) and (2) of the propylene homopolymer, which as explained in section 4, especially subsections 4.3 and 4.5 above are both linked to the melting point. In other words, the lack of an indication of the exact amount of the sample to be employed for the determination of the melting point with the DSC7 apparatus leads at most to a degree of uncertainty which however does not amount to a lack of sufficiency of disclosure. Accordingly the second objection raised pursuant to Art. 83 EPC must fail.

- 5.3 Concerning the third objection, the Board firstly observes that the patent in suit also teaches that the claimed compositions can be prepared by simply mixing the two components, so that there can be no doubt that other compositions according to the claimed invention than those disclosed in the examples can be prepared following the teaching of the patent. In any case the question as to whether the specific process disclosed in the examples of the patent in suit could not be modified in order to arrive at other compositions according to the claimed invention when taking into account the instructions given in the patent in suit (paragraphs [0057] to [0070]) and the general knowledge in the field of polypropylene polymers is a question which must be answered in the light of relevant experimental evidence. No such evidence was however provided by the respondents, which have the onus of the proof (cf T 182/89, OJ EPO 1991, 391). Consequently the third objection pursuant to Art. 83 EPC must also fail.

5.4 It is therefore concluded that the patent in suit meets the requirements of Art. 83 EPC.

6. *Inventive Step - Remittal*

Both respondents requested, in the case of a finding that the subject matter claimed was novel, that the case be remitted to the first instance for consideration of inventive step. The appellant made no comment on this aspect.

Accordingly the Board takes the view that the appropriate course of action is to remit the case to the first instance for consideration of inventive step.

**Order**

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

- 1). The decision under appeal is set aside.
- 2). The case is remitted to the first instance for further prosecution on the basis of the main request as submitted with letter dated 13 May 2005.

The Registrar:

The Chairman:

E. Goergmaier

C. Idez