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**Datasheet for the decision
of 14 May 2009**

Case Number: T 1464/05 - 3.4.02

Application Number: 94109180.3

Publication Number: 0632301

IPC: G02B 6/44

Language of the proceedings: EN

Title of invention:

Hydrogen-absorbing composition for optical fiber cables and optical fiber cables incorporation such compositions

Patentee:

Prysmian S.p.A.

Opponent:

Alcatel Kabel Beteiligungs-AG

Headword:

Hydrogen-absorbing composition/PRYSMIAN

Relevant legal provisions:

EPC Art. 123(2)

Relevant legal provisions (EPC 1973):

EPC Art. 54(2), 56, 104(1)

Keyword:

"Added subject-matter (main request: yes)"

"Prior use: delivery possibly for test purposes by way of ordinary commercial transaction - availability to the public (yes)"

"Inventive step: public prior use as closest state of the art (yes) - treatment of extrinsic features - obviousness (auxiliary request: no)"

"Apportionment of costs (yes, in part)"

Decisions cited:

G 0001/92, G 0001/93, T 0194/84, T 0300/86, T 0062/87,
T 0830/90, T 0221/91, T 0267/91, T 0602/91, T 0472/92,
T 0782/92, T 1085/92, T 0847/93, T 1028/93, T 0873/94,
T 0145/95, T 0202/95, T 0037/98, T 0264/99, T 0012/00,
T 0681/01, T 0913/01, T 1081/01, T 0407/03, T 0329/05,
T 1178/05, T 1510/06

Catchword:

Points 4.2; 5.2.2; 5.3.2 and 5.3.4



Case Number: T 1464/05 - 3.4.02

D E C I S I O N
of the Technical Board of Appeal 3.4.02
of 14 May 2009

Appellant: Alcatel Kabel Beteiligungs-AG
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
23 September 2005 concerning maintenance of
European patent No. 0632301 in amended form.

Composition of the Board:

Chairman: A. G. Klein
Members: F. J. Narganes-Quijano
B. Müller

Summary of Facts and Submissions

I. The appellant (opponent) lodged an appeal against the interlocutory decision of the opposition division finding European patent No. 0632301 (based on European patent application No. 94109180.3) as amended by the respondent (patent proprietor) during the first-instance proceedings to meet the requirements of the EPC.

II. The proceedings before the opposition division constituted the further first-instance proceedings following remittal of the case by the present Board in a different composition in appeal case T 12/00. The relevant facts of the previous proceedings are as follows:

The opposition filed by the appellant against the patent as a whole was based on the grounds for opposition of lack of inventive step (Article 100(a) together with Articles 52(1) and 56 EPC 1973) and lack of sufficiency of disclosure (Article 100(b) EPC 1973). The opposition division rejected the opposition on the grounds, *inter alia*, that the invention defined in the patent as granted involved an inventive step over the prior art relied upon by the appellant during the proceedings and including, among others, the following documents:

D1: EP-A-0217066
D3: GB-A-2144559
D9: JP-A-1255812 and the corresponding abstract published in "Patent Abstracts of Japan"
D16: US-A-4717236.

The appellant lodged an appeal, filed the following documents

- E1-a: letter dated 18.07.1991 from Seppic to Teleco
- E1-b: fax dated 19.11.1992 from Seppic to SAI
- E1-c: fax dated 03.12.1992 from SAI to Seppic
- E1-d: international consignment note dated 12.01.1993 from carrier Albert Frères
- E1-e: invoice dated 31.03.1993 from carrier RINDI to carrier Albert Frères
- E1-f: invoice dated 21.01.1993 from Seppic to Teleco
- E2: provisional data sheet of Sepigel H400 issued by Seppic and dated April 1993
- E3-a: letter dated 01.02.1993 from SAI to Ceat Cavi Industrie
- E3-b: letter dated 01.02.1993 from SAI to Cavicel
- E3-c: letter dated 01.02.1993 from SAI to Tratos Cavi
- E4: excerpt from a technical report by Seppic dated 13.11.1992 deposited at the office of M. Passelac, notary at Castres, Tarn (FR)
- E5: data-sheet "Polybutenes - Napvis" issued by BP Chimie (FR) and dated 05.11.1981

in support of the public prior use of the product Sepigel H400 by way of offer of sale and sale of 200 kg of the product by the company Seppic to the company Teleco before the priority date of the patent in suit, and based its case on appeal on lack of novelty and therefore, by way of inevitable consequence, on lack of

inventive step of the claimed invention over the alleged public prior use.

In decision T 12/00 the Board decided not to introduce the ground for opposition of lack of novelty into the proceedings (point 2.1 of the reasons), to admit into the proceedings the documentary evidence relating to the alleged prior use (point 2.2), to apply the principle of balance of probabilities as standard of proof in the assessment of the patentability of the invention with regard to the alleged public prior use in view of the fact that none of the parties was involved in the alleged prior use (points 2.2.4 to 2.2.6), and to remit the case for the assessment of inventive step.

III. In the subsequent first-instance proceedings the appellant raised an objection of added subject-matter (Article 100(c) EPC 1973) with regard to claim 1 of the patent as granted and filed new documents labelled E6 and E6a in support of the objection of lack of inventive step, and the respondent filed an amended set of claims and requested apportionment of costs under Article 104(1) EPC 1973.

In the interlocutory decision underlying the present appeal the opposition found, *inter alia*, that

- the respondent had implicitly agreed to the admission into the proceedings of the ground for opposition under Article 100(c) EPC 1973 and the claims amended according to the respondent's request complied with the requirements of Article 123(2) EPC 1973,

- on the balance of probabilities, the alleged offer of sale and sale of the product Sepigel H400 were

conducted on the basis that the product was for test purposes only and consequently Seppic and Teleco were bound by an implicit confidentiality agreement, so that no objection of lack of inventive step could be based on the alleged prior use, and

- the patent as amended met the requirements of the EPC, and in particular the claimed invention involved an inventive step with regard to the remaining prior art documents considered during the proceedings.

In its decision the opposition division also stated that it "considers it appropriate for the opponent to be obliged to pay 75% of the patentee's costs for the further opposition procedure, in accordance with Article 104(1) EPC [1973]". The opposition division based its finding essentially on the following facts: according to the respondent, it was only because of the late filing of the evidence of prior use that the remittal and the further opposition procedure were necessary; on the other hand, the appellant contended that it only became aware of the alleged prior use, in which it was not involved, after the end of the first opposition procedure; the late filing of documents E6 and E6a resulted in considerable additional work for the respondent during the further opposition procedure.

IV. With the statement of grounds of appeal the appellant contested the opposition division's finding that the amended claim 1 did not contain added subject-matter and also the finding that Seppic and Teleco were bound by an implicit confidentiality agreement in relation to the product Sepigel H400. In support of the public character of the alleged prior use, the appellant submitted a declaration of A. P. Deville, allegedly an

employee of Seppic at that time, and offered the author of the declaration to be heard as a witness.

The respondent for its part requested that the appellant be charged with all the costs incurred by it in the present appeal proceedings.

- V. The parties were summoned to oral proceedings. In a communication annexed to the summons the Board noted that the oral proceedings were to be focused primarily on the three issues addressed by the parties during the written procedure, i.e. on the allegation of added subject-matter, on the public character of the alleged prior use, and on the issue of apportionment of costs.
- VI. During the oral proceedings held before the Board on 26 June 2008 the respondent maintained as a main request the set of amended claims upon which the decision under appeal was based and submitted sets of claims amended according to first to fifth auxiliary requests. In view of the submissions of the parties and of the new issues addressed during the oral proceedings, in particular those relating to the substantive assessment of inventive step with regard to the alleged public prior use, at the end of the oral proceedings the Board declared the debate closed as far as the main request was concerned, and the appellant was given leave to submit in written its complete case on the issue of inventive step of the subject-matter of claim 1 of the first auxiliary request, based on the assumption that the delivery of the 200 kg of Sepigel H400 to Teleco took place without any implicit confidentiality agreement, and the respondent was

invited to subsequently submit a reply on the appellant's case.

- VII. The parties presented in written their respective cases and oral proceedings before the Board were held anew on 14 May 2009 as requested by both parties on an auxiliary basis.

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

The respondent filed a set of pages 2, 2a and 3 to 12 of the description of the patent amended according to the first auxiliary request and requested that the patent be maintained as maintained by the opposition division in its decision (main request) or on the basis of one of the first to fifth auxiliary requests filed during the previous oral proceedings.

The respondent maintained the request that the appellant be charged with all the costs that it incurred in the present additional opposition and appeal proceedings.

At the end of the second oral proceedings the Board announced its decision as recorded in the order below.

- VIII. Claim 1 amended according to the main request reads as follows:

"An optical fiber telecommunications cable comprising a core (1) provided with at least one optical fiber (3) received in a respective housing (2) of said core (1), wherein the cable comprises, in at

least a portion (Z1, Z2) of its internal volume a hydrogen-absorbing composition including:

- a hydrocarbon compound comprising at least 90% by weight of the overall composition weight of a silicon-free non-aromatic unsaturated hydrocarbon;

- a catalyst selected from a group including the transition metals, salts and organic and inorganic complexes of the transition metals;

wherein said silicon-free non-aromatic hydrocarbon is an unsaturated hydrocarbon which is not obtained by polymerization of monomers including conjugate dienes, said unsaturated hydrocarbon having:

- i) a molecular weight distribution about a mean value varying within a limited range such that it will show no significant phase separation phenomena by decantation or chromatography on a fibrous support;

- ii) a viscosity at room temperature in the range of from 500 to 70,000 cSt,

- iii) a viscosity at room temperature below 70,000 cSt, after ageing by exposure to air in thin layer for at least 7 days at 100°C;

said hydrocarbon compound having double bonds reactive to hydrogen at room temperature, in a corresponding amount to a iodine value in the 7 to 100 g/100g range."

Claim 1 amended according to the first auxiliary request differs from claim 1 of the main request in that

- the passage "wherein said silicon-free non-aromatic hydrocarbon is an unsaturated hydrocarbon which is not obtained by polymerization of monomers including conjugate dienes, said unsaturated hydrocarbon having [...]" has been replaced by "wherein

said silicon-free non-aromatic hydrocarbon is polybutene, said polybutene having [...]" and

- the expression "said hydrocarbon compound having double bonds" has been replaced by "said polybutene having double bonds".

The set of claims amended according to the first auxiliary request further includes dependent claims 2 to 16 all referring back to claim 1.

The wording of the claims amended according to the remaining auxiliary requests is not relevant for the present decision.

- IX. The arguments submitted by the appellant in support of its request are essentially the following:

Main request - Added subject-matter

As disclosed in the originally filed application, it is the compound - and not the composition as specified in claim 1 of the main request - which comprises at least 90% of a silicon-free hydrocarbon. The amendment is also inconsistent with the passages of the original application according to which the composition may also comprise 1 to 20% by weight of a thixotropic agent and 15 to 10% by weight of silica. The examples of the application do not provide any additional information in support of the amendment, and there is no experimental data on file showing that the amended feature is critical in respect of the required properties. Some of the examples (example 11 and Figure 5) would at the most support the amendment only when the silicon-free hydrocarbon is constituted

specifically by polybutene, and it is not possible to extrapolate or to generalize the disclosure relating to polybutene to a generic silicon-free hydrocarbon.

Alleged prior use

According to the patent (page 6, lines 17 to 20), the amount of hydrogen-absorbing composition that can be applied in a submarine optical fibre cable is 1.4 g/m, and the amount of 200 kg of the product Sepigel H400 delivered to Teleco was therefore sufficient to produce at least about 142 km of cable. The delivery was therefore not for test purposes only but for manufacturing a cable, although possibly not for commercial purposes.

In addition, the large quantity of Sepigel H400 involved and the fact that the product was not delivered free of charge are indicative of a normal buyer-seller relationship. There is no evidence or indication that there was an explicit or implicit secrecy agreement between Seppic and Teleco, or that Sepigel H400 did not leave the development stage, or that there was a co-search program between Teleco and Seppic, or that Teleco provided some feedback to Seppic about technical results of the product. On the contrary, the witness' declaration supports that the product was transferred to Teleco without any obligation to maintain secrecy. Furthermore, Teleco had no commercial interest in keeping the product confidential, and Seppic, being interested in commercializing the product, had an interest to disclose the performances of the product to potential customers as shown by the letters E3-a to E3-c. If

there was an implicit agreement on secrecy, there was no reason for Seppic to file the notarial declaration E4. It must therefore be concluded that the delivery involved a complete and unconditional transfer of the property in the material, free of any prior legal restraint and of any implied obligation of secrecy.

According to the data sheet E2 the product Sepigel H400 is a hydrogen trapper especially suitable for optical fibre cables to protect the optical fibres from hydrogen contamination. This information is also publicly available because in the chemical industry it is normal practice that when a chemical product is delivered to a customer a data sheet disclosing the way the compound works and its intended uses is enclosed, or it is mentioned to the customer that a data sheet is available which will be forwarded upon request. Also document E1a refers to the hydrogen-absorption characteristics of the product Sepigel H400 and to previous visits and in addition Teleco is a manufacturer of optical cables. In this context, the employees of Teleco were familiar with the suitability of the product Sepigel H400 for absorbing hydrogen in optical fibre cables and they were in a position to incorporate the product in an optical fibre cable. In addition, the notarial deposition E4 makes only sense if the product had reached a predetermined level of development and was definitive, and there is no evidence that the product was modified with the time; in any case, Teleco would have been informed if the composition would have significantly changed.

All the intrinsic features that can be obtained by chemical analysis of the delivered product were also

disclosed, and following decision T 62/87 it is allowable to use an internal or non-public document, such as the notarial deposition E4, as supporting evidence for such features. The composition of the product Sepigel H400 and the viscosity of the polybutene Napvis D3 present in the product can be derived from documents E4 and E5. Document E5 also discloses that Napvis D3 has a bromine number of 22, and since the ratio between the molecular weights of iodine and bromine is 126/80, Napvis D3 has also an iodine number of 35.

As regards the claimed feature relating to the molecular weight distribution and the phase separation characteristics on a fibrous support, decision G 1/92 refers to extrinsic features of a product only in relation to pharmaceutical products and to the use of a product. According to document E5, Napvis D3 has a relatively low mean molecular weight of 620 (page 1/9) and a comparison with the corresponding values of the polybutenes Napvis used in the patent (page 10, lines 33 and 34 and Table 1, in particular example 2) allows the conclusion that the polybutene of the delivered product also satisfied the claimed feature. The claimed feature was introduced in claim 1 during examination in reaction to an objection of lack of clarity of the examining division with regard to the expression "substantially homogeneous"; the claimed feature is therefore synonymous to "substantially homogeneous" and therefore superfluous. In addition, polybutenes are inherently substantially homogenous, the mentioned claimed feature is formulated in relative terms and merely formulates a wish in terms that are not limiting, there is no support in the patent

specification for the critical significance of the feature, and the patent specification (page 3, lines 16 to 10 and page 11, lines 17 to 20) correlates the molecular weight to the iodine number; consequently, the claimed feature is satisfied by the delivered composition. The disclosure in the patent specification with reference to counter-example 4 is irrelevant in this respect because it concerns the viscosity after ageing of the composition (page 3, lines 28 to 32).

Document E5 is silent as to the viscosity characteristics of Sepigel H400 after ageing in thin layer. However, an extrapolation of the information disclosed in the application as filed with reference to example 2 shows that the viscosity of Napvis D3 after ageing would also satisfy the corresponding claimed requirement. In any case, it is not realistic to expect that a polybutene such as Napvis D3 might have a viscosity after ageing above the claimed range.

First auxiliary request - Inventive step

According to the case law public prior use may be used as the closest state of the art (decisions T 49/87 (point 4.1 of the reasons), T 214/91 (point 4.1), T 839/92 (point 4) and T 210/94 (point 4)). In the present case the public prior use of the product Sepigel H400 is the closest state of the art and the skilled person is an average skilled person in the field of optical fibre cables. Public prior use creates a legal fiction that all information is in the public domain. One single sale and knowledge by one single member of the public are enough to establish public availability. The skilled person is therefore aware of

the aforementioned features of the product Sepigel H400. The sole distinguishing feature of claim 1 over the features of the public prior use is an optical cable incorporating the product Sepigel H400, and this distinguishing feature solves the problem of how to implement the hydrogen-absorbing composition in an optical fibre cable in order to obtain the most optimal use of the hydrogen-absorbing qualities of the composition. The simplest embodiment of an optical fibre cable comprises at least one optical fibre received in a housing so as to constitute a core. The hydrogen to be absorbed or trapped is released from the inside of the cable, and in order to protect the optical fibre against hydrogen it is clear that the composition should be placed in the proximity of the fibres or the sheaths which generate the hydrogen and thus in an internal volume of the cable as taught for instance in documents D1, D9 and D16. This obvious approach would result in an optical fibre cable as claimed so that the claimed subject-matter does not involve an inventive step.

Apportionment of costs

The second oral proceedings had become necessary because the respondent had submitted fresh auxiliary requests at the beginning of the first oral proceedings. The appellant, while having accepted admission of the new requests into the proceedings, was not in a position to address them in those oral proceedings. Therefore, the respondent has no right to an award of costs for the second oral proceedings. The rationale of decision T 847/93 should be applied. It is agreed to pay part of the respondent's costs for the

first oral proceedings, but no more than 50%. As regards the second opposition procedure before the first instance, the fact that during the first opposition procedure the appellant had not been aware of the public prior use that it had alleged only in the first appeal proceedings constitutes a mitigating circumstance and the appellant should not be obliged to pay more than the 75% of costs awarded in that procedure.

- X. The arguments of the respondent in support of its requests can be summarised as follows:

Main request - Added subject-matter

The amended feature "90% by weight of the overall composition weight" constitutes a clarification based on the proper interpretation of claim 1 on the basis of the whole disclosure of the original application. The question is whether the skilled reader reading the amendment is confronted with new subject-matter (decisions G 1/93, T 194/84 and T 873/94). A person skilled in the art would directly and unambiguously recognize from the actual technical context of the whole application as filed that, when considering whether the amount of 90% by weight of silicon-free hydrocarbon relates to the weight of the compound or to the overall composition weight, the only possible interpretation to be given is the second one. The opponent's interpretation is at variance with the disclosure of the technical problem to be solved and with the solution given thereto in the original application since the disclosed technical effects would not be achieved if the overall composition comprised

less than 90% by weight of the silicon-free hydrocarbon. In particular, the disclosure makes clear that the critical conditions to be met are those relating to the composition and that the advantageous features of the composition are achieved by the properties of its basic ingredient, i.e. the unsaturated hydrocarbon (page 2, fifth paragraph, and page 4, penultimate paragraph to page 6, third paragraph of the application as filed), implying in its technical context that it is the unsaturated hydrocarbon and not other entities which determines the features of the composition by making up, as claimed, at least 90% by weight of the overall composition weight. This interpretation is also confirmed by the disclosure in the application relating to an amount of up to 5% by weight of a second unsaturated hydrocarbon based on the overall composition weight and to the different examples, and more specifically to the examples relating to polybutene. The inconsistency relating to the amount of thixotropic agent has already been removed; the skilled reader would have immediately recognized that this amount was intended to be consistent with the disclosure of the invention and not the other way around.

Alleged prior use

In the production of an optical fibre cable, from 110 to 150 kg of a product such as Sepigel H400 are needed in order to run tests with an industrial equipment as required by all the cable qualification standards; the equipment would then have to be started by purging and cleaning the pumping system, by filling the equipment, by regulating the flow rate and the application pressure, and then by feeding the product to the line.

Any industrial production would therefore have required a much higher quantity. The quantity of 200 kg of Sepigel H400 allegedly delivered to Teleco was therefore small and could have been used, at best, for test purposes.

In addition, the delivery was made under the heading "commande d'essai" (test order) and without prejudice of the price for possible further negotiations. It is common practice in this field that products delivered for test purposes are invoiced except for very small scale laboratory tests. There is no evidence that further negotiations actually took place or that a subsequent delivery was ever made.

In activities related to the search and development stage or to the test of a new compound for possible application in a product, it is a normal behaviour of the supplier of the compound to try to keep secret any information regarding the compound. Therefore, Seppic had an interest to keep the product Sepigel H400 secret. In addition, if possible competitors would have access to the test results, the rights on possible future developments, including the use of the compound in a cable, would be jeopardized, so that also Teleco had no interest to render public any information regarding the testing activities of the new compound. The fact that Seppic filed a description of the product at a notary's office before the delivery to Teleco instead of disclosing the product in a publicly available publication also shows that it was Seppic's intention to keep the product secret.

All these circumstances indicate that there was at least an implicit agreement on secrecy regarding the delivery of the product under test (decisions T 830/90, T 221/91, T 267/91, T 782/92 and T 37/98). In any case, there is no evidence that information exchanged between Teleco and Seppic went beyond information having a confidential character. The declaration of Mr. Deville constitutes only a personal opinion made years after the delivery and does not add any objective element.

In addition, the information in the letter E1a remained confidential, the communication E1-b between Seppic and SAI constitutes an internal document not available to third parties including Teleco, documents E-1c, E-1d, E-1e are internal documents not available to Teleco, the letters E3-a to E3-c only refer to documentation and are silent as to what was made available, and there is no evidence that the information in document E2 and especially that in the notarial deposition E4 was rendered public before the relevant date.

In line with the established case law, a commercially available product *per se* does not implicitly disclose anything beyond its composition or internal structure (decision G 1/92, point 3). There is, however, no evidence on file as to the actual composition and the actual intrinsic properties of the delivered product. In particular, there is no evidence that document E4 was made available to Teleco, or that there is a correspondence between the product under development referred to in document E4 and the delivered product, or that the information disclosed in document D4 would have been derivable from the delivered product. The rationale of decision T 62/87 does not support the

appellant's allegation that document E4 can be used as supporting evidence of the actual intrinsic features of what was included in the drum of product delivered to Teleco. In addition, as established in decisions T 1028/93 and T 1178/05, the same trade designation of a product may refer to different formulations of the product, especially during the development stage of a product such as Sepigel H400 which was under testing at the time of the delivery. Document E2 is only a "provisional data sheet", and small changes of the product under development would have a significant effect in the present context.

The simple delivery of the product did not amount to any disclosure or suggestion of an optical cable specifically designed to solve predetermined problems as provided for by the claimed invention, let alone of a cable comprising a hydrogen-absorbing composition located at a specific location of the cable. In addition, as already stated, the documents were non-public and/or silent as to the pertinent features or there is no evidence that they related to the delivered product, and no information could have been deduced that the delivered product was suitable for absorbing hydrogen in an optical fibre cable or at least suitable for an optical cable. In particular, document E1-b simply indicates some activities within a business area of interest ("activité cable optiques") associated with various customers and covering many different technologies, and there is no evidence of the availability to the public of information concerning how and where the product could possibly be used in order to solve problems encountered in the various communication devices possibly manufactured by Teleco,

it being known at that time that hydrogen absorption was also to be carried out in other devices (terminals and joints or connectors for optical fibre cables, amplifiers with active core optical fibres, optical fibre sensors, etc.). The lack of evidence relating to the actual production of optical cables containing the product also indicates Teleco's inability to find any advantageous use of the product in optical cables. There is therefore no evidence that the employees of Teleco were aware of the problem of hydrogen absorption in optical cables or that the product Sepigel H400 was suitable for optical cables.

In any case, whichever information was disclosed or exchanged between Seppic and Teleco, that information was restricted to the staff of the companies involved and therefore non-public (decision T 300/86), the recipient Teleco was not to be considered as representative of all interested persons (decision T 1081/01), and the personnel of Teleco is not to be considered to represent the general public (decision T 1085/92), so that the information was not rendered available to the public.

First auxiliary request - Inventive step

The alleged prior use does not qualify as closest state of the art. Teleco did not receive a cable, but only a drum containing a composition that did not offer any teaching towards its use in an optical cable or relating to the claimed features. The information contained in the documents relied upon in the alleged prior use was not made available to the employees of Teleco, let alone to third parties or to the public.

Therefore, the delivered product cannot reasonably be seen as the closest state of the art because the claimed invention relates to an optical fibre cable and more specifically to the problem of hydrogen diffusion in an optical cable which can cause signal attenuation and none of these aspects could have been derived in an objective manner from the alleged delivery of a drum of the product. In any case, regardless of what was actually disclosed by this delivery, the members of the public, and in particular the skilled person addressed in Article 56 EPC 1973, were not aware of it. The closest state of the art is rather constituted by the disclosure of document D3.

The evidence on file is silent as to the features of the product Sepigel H400 relating to the viscosity after ageing and to the phase separation characteristics. In fact, these features constitute extrinsic features within the meaning of decisions G 1/92 and T 472/92, and therefore the delivery of the product was not suitable to make available to the public the corresponding characteristics of the delivered product.

The invention does not require that the polybutene is homogeneous within the ordinary meaning of the term, but within the specific meaning defined in claim 1; the definition of the requirement in terms of a qualitative test does not imply that the requirement is not limiting. As shown by the examples given in the patent specification, there are polybutenes which are not homogenous within the claimed meaning and there is no evidence that the delivered product satisfied the claimed requirement. On the contrary, the passage on page 7 of document E5 proposes the use of the family of

compounds Napelec instead of the family of polybutenes Napvis to avoid migration, thus indicating that the polybutenes Napvis may migrate or demix and that non-demixing is not a property inherent to the family of polybutenes Napvis.

The appellant's submissions on the viscosity after ageing of Napvis D3 rely on an invalid extrapolation based on the prior knowledge of examples given in the patent specification and not involving the composition Napvis D3. In addition, a hydrocarbon may become solid with a high value of the viscosity after ageing (page 2, lines 50 to 53 of the patent specification).

The inventors discovered that a number of conflicting interdependent characteristics (sufficient high reactivity with respect to hydrogen to protect the optical fibres but sufficient low reactivity with respect to oxygen to avoid hardening, viscosity, avoidance of demixing and separation phenomena stability, rheological characteristics, stability during storage etc.) have to be taken into account simultaneously to solve the problem considered in the patent (page 3, lines 16 to 19) and that only a specific balance between the different and conflicting characteristics solved the problem considered in the patent. Only hindsight would allow the conclusion that the skilled person would have recognised in the simple delivery of the product Sepigel H400 any useful feature towards the claimed subject-matter. None of the documents teaches or suggests the correct perception of the interrelated aspects underlying the invention; in particular, document D16 relates to the provision of a

water blocking compound to avoid moisture, i.e. is not related to the considerations underlying the invention.

Apportionment of costs

An apportionment of costs for the whole of the second opposition appeal proceedings is justifiable for the following reasons:

- the appellant based the first appeal proceedings substantially on new evidence, which constituted a new case bearing little or no resemblance to the case presented during opposition proceedings;

- the appellant based the second opposition proceedings both on the evidence presented for the first time at the former appeal stage and on new documents (documents E6 and E6a), which had never been relied on before and which were filed more than five and a half years after the end of the opposition period;

- the appellant based the second appeal proceedings only on the new evidence filed for the first time at the former appeal stage; and

- the appellant never justified in any manner the reasons for the delay in the submission of the new evidence, both at the first appeal proceedings, at the second opposition proceedings and at the present second appeal proceedings.

Accordingly, the patent proprietor had to deal, in effect, with a second opposition to the patent which fully justifies an apportionment of costs in line with the principles set out in the relevant case law of the boards of appeal (among others, decision T 847/93).

Reasons for the Decision

1. The appeal is admissible.
2. *Main request - Added subject-matter*
 - 2.1 Claim 1 of the main request requires - as it was also the case of claim 1 of the patent as granted - that the hydrogen-absorbing composition present in the internal volume of the claimed optical fibre cable includes a catalyst and "a hydrocarbon compound comprising at least 90% by weight of the overall composition weight of a silicon-free non-aromatic unsaturated hydrocarbon". However, as submitted by the opponent, the application as originally filed requires consistently that the composition includes a hydrocarbon compound, a catalyst, and optionally additional components such as silica in an amount in the range of 15 to 10% by weight, a thixotroping agent in an amount in the range of 1 to 20% by weight and other additives (dependent claim 12 and page 9, lines 11 to 15 and 21 to 23 of the application as originally filed), wherein the "hydrocarbon compound comprises at least 90% of a substantially homogeneous silicon-free hydrocarbon" (claim 1 and page 3, lines 2 to 4 and 13 to 19 of the application as originally filed). According to these passages of the application as filed - which are literally clear and unambiguous and have an unequivocal technical meaning - the amount of 90% by weight of silicon-free hydrocarbon relates to the weight of the hydrocarbon compound and not to the overall composition weight as claimed.

In addition, the sole basis in the original disclosure for a silicon-free hydrocarbon being present in an amount of at least 90% by weight of the overall composition weight concerns particular embodiments in which the silicon-free hydrocarbon is constituted by polybutene (page 21, lines 20 to 27 of the application as filed, see also the examples involving polybutene and Figure 5), and there is no disclosure in the application as filed from which it could be deduced that the amount considered in these particular embodiments could also be used with other silicon-free hydrocarbons satisfying the remaining requirements. More particularly, the particular embodiments are disclosed with reference to the specific properties of polybutene (see example 11 and page 6, line 22 *et seq.*) and, as submitted by the appellant, there is no indication in the application as filed and no experimental data on file that would allow to apply to other hydrocarbons the specific teaching disclosed in the application with reference to polybutene.

The further submission of the respondent that - in agreement with the view expressed by the opposition division in its decision - the disclosure of the application as filed relating to the technical considerations underlying the invention, and in particular those discussed on page 2, lines 24 to 29 and page 4, line 27 to page 6, line 12 of the application as filed, would require that the overall composition, and not the compound alone, comprises at least 90% by weight of the silicon-free hydrocarbon is, as already noted above, only supported in the particular case in which the hydrocarbon is polybutene and there is no technical argument or experimental data

that would support the respondent's submissions for other silicon-free hydrocarbons. On the contrary, no disclosure of the application as filed would rule out the possibility that the technical effects achieved by the invention could also be achieved with a silicon-free hydrocarbon, other than polybutene, having the appropriate properties and present in an amount of at least 90% by weight of the compound but of less than 90% by weight of the composition, and the disclosure in the application as filed relative to the provision in the composition of up to 20% by weight of a thixotroping agent (page 9, lines 11 to 15) and up to 15% by weight of silica (claim 12) would even support this possibility and be in contradiction with the respondent's submissions. The further attempt of the respondent to see in the latter upper ends of range values a removable inconsistency in the application as filed cannot, in the context of a wholly consistent and clear disclosure of the application, be accepted by the Board. In these circumstances and in the absence of any support to the contrary in the remaining disclosure of the application, there is no reason for considering any clarification or any alternative interpretation of the passages of the application referred to above going beyond the clear literal and technical meaning of the passages themselves.

As regards the submission of the respondent that, following the relevant case law and in particular decisions G 1/93 (OJ 1994, 541), T 194/84 (OJ 1990, 59) and T 873/94 (OJ 1997, 456), the relevant test is not finding an express antecedent basis for the amendment, but whether by virtue of the amendment the skilled reader is confronted with new subject-matter, the Board

notes that, as is apparent from the above assessment, the skilled reader is confronted with a new requirement and therefore with new subject-matter, so that the above assessment is not at variance with the submission of the respondent in this respect.

- 2.2 The Board concludes that, in the absence of any clear and unambiguous disclosure in support of the amendment and also in the absence of any inconsistency or lack of clarity in the application as filed that would have prompted the skilled reader to interpret the original disclosure in its technical context along the lines of the amended feature, the claimed requirement that the silicon-free hydrocarbon is present in an amount of at least 90% by weight of the overall composition cannot be derived directly and unambiguously from the disclosure of the application as filed.

Consequently, claim 1 of the main request contains subject-matter extending beyond the content of the application as originally filed (Article 123(2) EPC and Article 100(c) EPC 1973) and therefore the main request is not allowable.

3. *First auxiliary request - Amendments*

The set of claims amended according to the first auxiliary request were filed during the first of the oral proceedings held before the present Board in order to overcome the objection of added subject-matter referred to in point 2 above. The amendments concern the limitation of the subject-matter of claim 1 to a silicon-free non-aromatic hydrocarbon constituted by polybutene and are supported by the first alternative

defined in dependent claim 4 of the main request and by the particular embodiments disclosed in the description and referred to in point 2.1 above. As apparent from the assessment in point 2 above, the amendments overcome the objection of added subject-matter raised with regard to claim 1 of the main request (Article 123(2) EPC). In view of the clear admissibility of the amendments and since no objection was raised by the appellant in respect of the admissibility of the amended claims, the Board considered it appropriate to admit the first auxiliary request into the proceedings. The same considerations apply with respect to the consequent amendments made to the description.

4. *Alleged prior use - Public availability*

- 4.1 The public prior use alleged by the appellant relates to the offer of sale, sale and delivery of the product Sepigel H400 by the company Seppic (FR) to the company Teleco (IT) via SAI (Società Alcan Italia S. p. A.), allegedly an Italian agent of Seppic, during the period from July 1991 to March 1993, i.e. before the priority date of the patent in suit (29.06.1993).

Document E1-a is a letter from Seppic to Teleco dated 18.07.1991 in which Seppic communicates to Teleco that further to their visit they attached a sample of the product Sepigel H400 for evaluating its characteristics in relation to the requirements of the SIP, at that time an Italian telephone company. Documents E1-b to E1-f, all dated between 19.11.1992 and 31.03.1993, relate to the subsequent offer, sale and delivery of 200 kg of the product Sepigel H400 by Seppic to Teleco.

During the present appeal proceedings the parties did not dispute the alleged delivery by Seppic to Teleco of 200 kg of the product Sepigel H400 before the priority date of the patent in suit, and the Board is satisfied that the delivery took place as evidenced by the documents on file. However, the parties have expressed different views as to what, if anything at all, was rendered available to the public by the alleged delivery and by the circumstances of the delivery. In particular, the opposition division held in its decision that an amount of 200 kg of Sepigel H400 was suitable for test purposes only and that consequently the alleged sale and delivery of the product were bound by an implicit confidentiality agreement, and the appellant has contested this conclusion. The respondent for its part has called into question that, apart from the product itself, any other relevant feature of the product could have been made available to the public.

- 4.2 While document E1-a refers to the delivery in 1991 of a small sample ("échantillon") of the product Sepigel H400 for the purposes of evaluating predetermined requirements and therefore for testing purposes, the subsequent delivery of the product evidenced by documents E1-b to E1-f involved 200 kg of the product. In view of the submissions of both the appellant and the respondent relating to the amounts of composition required for the production of optical fibre cables, especially of submarine cables (see first paragraph of section "Alleged prior use" in points IX and X above), the Board concurs with the opposition division that an amount of 200 kg of the product, although clearly a bigger amount than the small sample initially delivered,

would not have been sufficient for the production of optical cables on a commercial scale, but at the most for possibly carrying out tests in the production of optical cables and with the cables so obtained.

However, as held in decision T 681/01 (point 2.8 of the reasons and point 2 of the headnote), "there must be something in the circumstances that suggests that a confidential relation existed before a delivery which appears to be the result of an ordinary commercial transaction can be disregarded as not making the delivered goods available to a member of the public", and the present Board is of the opinion that, contrary to the view expressed by the opposition division in its decision (which cited decisions T 782/92 and T 37/98) and to the submissions of the respondent (which additionally cited decisions T 830/90 (OJ 1994, 713), T 221/91 and T 267/91), the mere fact that a product has been delivered possibly for carrying out tests in what appears to be the result of an ordinary commercial transaction does not constitute by itself, in the absence of any other special circumstance or supporting evidence, a sufficient condition for concluding that the product was necessarily delivered under an implicit confidentiality agreement (see in this respect decisions T 602/91, points 2.1 and 2.2 of the reasons, T 264/99, point 4, T 913/01, point 1.3, T 407/03, point 2.3, and T 1510/06, point 4.2, in particular 4.2.4(b)).

In the particular circumstances of the present case, and with reference to the delivery involving 200 kg of the product, not only is there no indication that any express secrecy agreement existed between Seppic and

Teleco, but also no indication that any particular or special relationship existed between the two companies other than the ordinary relationship between a seller and a buyer company. In particular, there is no indication in the evidence on file that the delivery of the product occurred at some stage of the development of the product before its unrestricted introduction into the market as contended by the respondent, or that the product Sepigel H400 was manufactured by Seppic within a technical cooperation agreement or within a research or development program with Teleco, or restrictively sold by Seppic to Teleco under predetermined conditions or within a contractual relationship from which any particular interest in a secrecy agreement could be derived. On the contrary, the confluence of the following circumstances would rather indicate that the delivery of the product to Teleco took place as an ordinary commercial transaction:

- The delivery of the amount of 200 kg of the product took place about one and a half years after a small sample had been sent for testing predetermined characteristics and, while the small sample had apparently been sent free of charge, Teleco was charged for the delivery of the amount of 200 kg of the product (document E1-f). These facts constitute an indication that Teleco first obtained information on the characteristics of the product before acquiring the product as a typical potential end user of this kind of products.

- At least in July 1991 (see document E1-a), i.e. about one and a half years before the delivery of the amount of 200 kg of the product, the product already had a trade name "Sepigel H400" consistently used in

the documents on file, and the details of its composition and manufacturing process had been deposited at a notary's office in November 1992 (document E4). These facts would indicate that the development stage of the product had already been completed before the delivery of the product in 1993.

- The product Sepigel H400 was offered in January 1993 by the Italian agent of Seppic, SAI, to at least three further companies (documents E3-a to E3-c). This fact indicates the interest of Seppic to disclose the product to further potential customers during what appears to have also constituted routine commercial contacts, and therefore also the intention of Seppic to produce and sell the product commercially.

It is also in this context that the statement "commande d'essai [...] sans préjuger du prix pour d'éventuelles négociations ultérieures" in document E1-b would refer to Teleco's intention to try the product and the commercial offer of Seppic before possibly deciding in favour of a larger order at a price to be agreed upon later, rather than to performing tests within a special relationship as contended by the respondent.

As pointed out by the respondent, there is no evidence that further negotiations took place between Seppic and Teleco or that subsequent deliveries of the product were made or that Teleco actually produced optical cables with the delivered product. Nonetheless, although such evidence would have further supported the above assessment, the mere absence of such evidence does not affect, and is not at variance with the above assessment.

The further submission of the respondent that the deposit by Seppic of information relating to the product Sepigel H400 at a notary's office shows the clear intention of Seppic to maintain at that time secret the features of the product is, as already found by the opposition division, only speculative and no clear univocal conclusion can be drawn in this respect from the notarial deposition.

In view of the above, and in the absence of any indication or evidence to the contrary, the Board sees no reason for not considering the offer and delivery of the product Sepigel H400 by Seppic to Teleco as a regular and unrestricted commercial transaction without implicit obligation of confidentiality on the part of the recipient Teleco as a member of the public who is therefore free to disclose any information that could have been gained from the circumstances under which the delivery took place.

In view of the conclusion reached above, the Board did not find it necessary to hear the witness offered by the appellant in support of its submissions.

- 4.3 The parties also disputed whether the information that the product Sepigel H400 is a hydrogen-absorbing composition suitable for optical fibre cables was rendered available to the public. According to the respondent, the prior use was confined to the delivery of a drum of the product, i.e. the employees of Teleco received no information relating to the hydrogen-absorbing characteristics and/or to the potential uses of the product in optical cables.

However, the short text in the letter E1-a from Seppic, a chemical manufacturer, to Teleco, a manufacturer of optical cables, refers to Sepigel H400 as a hydrogen absorbing compound. Moreover, the letter E1-b from Seppic to SAI contains as reference the mention "RE. Activité cables optiques". In addition, the introductory part of the provisional data sheet E2 of Sepigel H400 issued by Seppic itself and containing technical information on the product refers to the product as containing "a highly efficient hydrogen trapper, and is especially suitable for optical cables when hydrogen contamination of fiber is likely to be a problem during the life-time of the cable" (page 2 of document E2).

In this context, and irrespective of whether documents E1-a, E1-b and E2 were confidential or rendered available to the public before the priority date of the patent in suit - as disputed by the parties in particular with regard to document E2 -, the Board considers highly implausible and unrealistic that during the visits and the different contacts that took place between Seppic and Teleco prior to the delivery of the product and evidenced by the documents on file and which resulted in Teleco receiving a small sample of the product Sepigel H400 and then ordering 200 kg of the product, there was no information disclosed or exchanged between the seller and the buyer as to the hydrogen-absorbing characteristics of the product and its suitability in fibre optical cables. In these circumstances, the Board concludes that it was much more likely than not that such information was exchanged between the parties involved in the offer, sale and delivery of the product.

In view of the above, and since the standard of proof to be applied in the present case is the balance of probabilities - see point II above and the preceding decision T 12/00, points 2.2.4 to 2.2.6 of the reasons -, the Board concludes that the information relating to the suitability of the product Sepigel H400 as hydrogen-absorbing composition in optical fibre cables was also made available to the public within the meaning of Article 54(2) EPC 1973.

- 4.4 During the proceedings the respondent has also submitted that the employees of Teleco do not represent the public and that therefore the product Sepigel H400 and any case any possible information relating to the potential uses of the product were not rendered available to the public. However, once it has been concluded that the delivery of the product to Teleco was not bound by a confidentiality agreement and was public, there is no reason in the present circumstances for disqualifying Teleco and in particular its employees as members of the public within the meaning of Article 54(2) EPC 1973 or for treating differently the delivered product and any information relating to the delivered product and exchanged between the seller and the buyer in what appears to be an ordinary commercial transaction. As regards the decisions cited by the respondent, decision T 300/86 concerned a case in which information was transmitted to a large and restricted circle of persons who were however bound to secrecy (points 2.2 and 2.6 of the reasons), decision T 1085/92 concerned a case in which there existed contractual relations and development agreements between the parties involved in an alleged prior use

(point 2), and decision T 1081/01 concerned a case in which there was a special relationship between the donor and the recipient of information at the time of receipt of information (points 7 and 8). Therefore, all these decisions concerned situations not comparable to the present one and are therefore not pertinent.

4.5 The Board concludes that both the product Sepigel H400 and the information that the product is suitable as a hydrogen-absorbing composition in optical fibre cables were made available to the public within the meaning of Article 54(2) EPC 1973 by the prior use in suit.

5. *Auxiliary request - Inventive step*

5.1 The issue of novelty was not a ground of opposition (see point II above and the preceding decision T 12/00, point 2.1 of the reasons), nor was novelty an issue during the present proceedings.

5.2 As regards the issue of inventive step, the parties disputed during the proceedings whether the alleged prior use constituted the closest state of the art in the assessment of inventive step according to the problem-solution approach.

5.2.1 According to the introductory part of the patent specification, it was known at the priority date that the diffusion of hydrogen into the optical fibres of an optical fibre cable, especially of submarine cables, may cause attenuation of the signals transmitted therethrough (page 2, lines 6 to 15 of the patent specification) and prior art approaches relied on the use of materials which may bond the hydrogen before it

reaches the optical fibres (page 2, line 16 *et seq.*), and the invention is primarily directed to the provision of suitable hydrogen-absorbing materials (page 2, lines 3 to 5 and line 37 *et seq.*). As concluded in point 4.5 above, the product Sepigel H400 was made available to the public together with the information relating to the suitability of the product as a hydrogen-absorbing composition in optical fibre cables.

Thus, as submitted by the appellant, the skilled person, confronted with the primary problem of providing suitable hydrogen-absorbing compositions for optical fibre cables and aware of the features of the public prior use in suit, would consider the latter as a promising starting point. Therefore, the Board concurs with the appellant that the features rendered available to the public by the public prior use in suit can be considered as the closest state of the art.

- 5.2.2 The respondent for its part has objected that the skilled person referred to in Article 56 EPC 1973 was not aware of the delivery to Teleco of the product Sepigel H400 and that therefore the features of the public prior use in suit do not qualify as the closest state of the art.

These submissions of the respondent would presuppose that Teleco and in particular its employees, notwithstanding their being members of the public within the meaning of Article 54(2) EPC 1973 (see point 4.4 above), would have been in a different, possibly privileged position in relation to the person skilled in the art addressed in Article 56 EPC 1973.

This line of argument, however, is in contradiction with the established doctrine that the notional person skilled in the art referred to in Article 56 EPC 1973 is assumed to be aware of the totality of the prior art pertinent to the relevant area of technology and in particular of everything made available to the public within the meaning of Article 54(2) EPC 1973 (see decisions T 145/95, point 5, T 202/95, point 4.12, and T 329/05, point 2.7). In addition, Article 54(2) EPC 1973 specifies expressly that the state of the art referred to in Article 56 EPC 1973 comprises everything made available to the public "by means of a written disclosure or oral description, by use, or in any other way", and this definition emphasizes that the different means by which the state of the art is made available to the public rank equally with each other. Thus, as held in decision G 1/92 (OJ 1993, 277, point 1.2 of the reasons), "information deriving from a use is governed in principle by the same conditions as is information disclosed by oral or written description" and there is no reason for treating differently information rendered available to the public by prior use and information made available to the public by other means as suggested by the respondent.

The Board also notes that, once it has been concluded that the product Sepigel H400 and specific information relating to the technical function and potential uses of the product have been made available to the public within the meaning of Article 54(2) EPC 1973 as already concluded in point 4.5 above, there is no need - as submitted by the appellant with reference to "Case Law of the Boards of Appeal" EPO, 5th ed. 2006, Chapter I, paragraph C.1.8.7(a) - to consider whether Teleco and

in particular its employees as members of the public did transmit the relevant information to third parties, i.e. to the remaining members of the public as submitted by the respondent. The notional skilled person referred to in Article 56 EPC 1973 is therefore supposed to be aware of all the features of the prior use in suit that have been made available to the public. Thus, although it would be unrealistic to assume that all skilled members of the interested public would have been aware of the features made available to the public by the prior use in suit, the notion of skilled person under Article 56 EPC 1973 ensures that any obvious development or application of the features of the public prior use by any particular skilled member of the interested public - possibly an employee of Teleco - that has gained information on the features made available to the public by the prior use in suit is treated under Article 56 EPC 1973 as such, i.e. as obvious with regard to the state of the art, irrespective of whether or not other members of the interested public actually became aware of the features of the prior use.

In view of the above, and in accordance with the submissions of the appellant which cited different decisions (see point IX above) in which a public prior use was also considered as the closest state of the art, the Board sees no reason for disqualifying the features made available to the public by the prior use in suit as closest state of the art.

- 5.2.3 The skilled person, starting with the features made available to the public by the prior use in suit as closest state of the art and therefore aware of the

information relating to the suitability of the product Sepigel H400 as a hydrogen-absorbing composition in optical fibre cables, would consider the objective technical problem of how to implement this teaching, i.e. of how to provide an optical fibre cable having the hydrogen-absorbing characteristics endowed by the product Sepigel H400. As submitted by the appellant with reference to documents D1 (Figure 3 and the corresponding disclosure), D9 (abstract) and D16 (column 2, lines 6 to 12) each disclosing an optical fibre cable comprising a housing encompassing at least one optical fibre and a hydrogen-absorbing composition in the internal volume of the cable, the skilled person would then have considered the manufacture of fibre optical cables comprising, as it was standard at the priority date of the patent in suit as illustrated by documents D1, D9 and D16, at least an optical fibre within a housing constituting a core and having, as it was also known at that time for optical fibre cables comprising a hydrogen-absorbing agent as shown in documents D1, D9 and D16, the hydrogen-absorbing composition at some location within the internal volume of the optical cable. The argument of the respondent that document D16 rather relates to the provision of a water blocking compound to avoid moisture cannot be followed because the document also refers expressly to the use of materials removing traces of hydrogen within the cable (column 2, lines 10 to 13).

- 5.3 The question to be answered now is whether the skilled person, following the obvious approach mentioned above, would then inevitably have arrived at an optical fibre cable comprising all the structural and functional features required by the claimed subject-matter.

5.3.1 According to document E4 the product Sepigel H400 contains 92% of the polybutene Napvis D3 manufactured by BP Chimie and 0.5% of a catalyst comprising 5% of palladium (section I of the document). This document is a declaration containing a technical report and deposited by Seppic at a notary's office and therefore was by its very nature a non-public document; in addition, there is no evidence that its content was rendered available to the public before the priority date of the patent in suit. However, the composition of the delivered product was available to the skilled person by means of standard chemical analytical techniques available at that time and document E4 constitutes indirect evidence of what would have been the result of such an analysis. In addition, although there is no direct evidence that the composition of the delivered product corresponded exactly to the composition of the product reported in document E4 as submitted by the respondent with reference to decision T 62/87 (points 4.1 and 4.3 of the reasons), it appears from the series of documents on file that the product had reached at that time a level of development (see point 4.2 above) such that its composition was already substantially fixed and definitive, and although subsequent modifications of the composition cannot be excluded as submitted by the respondent with reference to decisions T 1028/93 (point 2.3.3 of the reasons) and T 1178/05 (point 4.2), there is no indication that the modifications would have been sufficiently significant to affect the present conclusions.

In addition, according to document E5, a report from BP Chimie on the family of polybutenes Napvis and

undisputedly belonging to the state of the art, the polybutene Napvis D3 has a viscosity at room temperature of the order of 4000 cSt (graph on page 9/9) and a bromine number of 22 (Table III of the document). The appellant has submitted that a bromine number of 22 corresponds to an iodine number of 35, and this submission has not been disputed by the respondent.

It follows that the skilled person, following the obvious approach mentioned above, would have arrived at an optical fibre cable including in its internal volume a hydrogen-absorbing composition including a hydrocarbon compound comprising at least 90% by weight of polybutene and a catalyst of the transition metal palladium, the polybutene constituting a silicon-free non-aromatic unsaturated hydrocarbon having double bonds reactive to hydrogen at room temperature in a correspondent amount to an iodine value in the claimed range 7 to 100 d/100g and having a viscosity at room temperature within the claimed range 500 to 70,000 cSt.

- 5.3.2 As regards the claimed features of the polybutene relating to the phase separation characteristics on a fibrous support (feature i) of claim 1) and the viscosity characteristics after ageing in thin layer (feature iii) of claim 1), the respondent has objected that the corresponding characteristics of the delivered product Sepigel H400 constitute extrinsic features within the meaning of decisions G 1/92 (*supra*, point 3 of the reasons) and T 472/92 (OJ 1998, 161, point 7.3.4) and that no information relating to these characteristics could have been rendered available to the public by the delivery of the product. The appellant for its part objected that the considerations in the

passage in point 3 of decision G 1/92 are confined to pharmaceutical products under the special regime of Article 54(5) EPC and to the use of a known product based on a new technical effect. The Board notes in this respect that although the present assessment of inventive step involves the use of the delivered product in an optical fibre cable, the conclusion drawn in point 5.2.3 above that it would have been obvious to use the delivered product in an optical fibre cable has been based on the public availability of the information relating to the suitability of the delivered product as a hydrogen-absorbing composition in optical fibre cables, i.e. no extrinsic feature not made available to the public was involved in reaching the conclusion. Accordingly, the question to be answered at this stage of the assessment of inventive step (see however point 5.3.4 for considerations at a further stage) is not whether extrinsic features of the polybutene present in the delivered product such as the phase separation characteristics on a fibrous support and the viscosity characteristics after ageing in thin layer were made available to the public by the public prior use in suit, but whether the obvious approach mentioned above would have inevitably resulted in an optical fibre cable satisfying the corresponding claimed requirements.

- 5.3.3 As regards the phase separation characteristics of the delivered product, the appellant has submitted that the claimed feature according to which the polybutene has "a molecular weight distribution about a mean value varying within a limited range such that it will show no significant phase separation phenomena by decantation or chromatography on a fibrous support" is

also implicitly satisfied by the polybutene of the delivered product. In support of this submission, the appellant has noted that the claimed feature was inserted in the claim during the examination proceedings to clarify the meaning of "substantially homogeneous" according to the qualitative definition of this term given in the description of the application and that therefore the claimed feature simply expresses that the polybutene to be used in the composition is a homogeneous polymer, and since the polybutenes Napvis are substantially homogeneous, the polybutene of the delivered product satisfied the claimed condition.

The line of argument of the appellant is, however, not persuasive. According to the pertinent passages of the description of the application and of the patent by "substantially homogeneous hydrocarbon" is meant that the hydrocarbon has "a molecular weight distribution about a mean value varying within a limited range, such that it will show no significant phase separation phenomena by decantation or chromatography on a fibrous support" (page 2, lines 43 to 46 and also page 4, lines 19 to 21 of the patent specification). The definition of "substantially homogeneous" given in these passages departs from the common meaning of "homogeneous" and gives it a particular meaning as relating to the phase homogeneity of the hydrocarbon when subject to decantation or chromatography on a fibrous support, this property being correlated according to the teaching of the patent to the molecular weight distribution of the polymer about its mean value. Therefore, the mere fact that the polybutene Napvis may be a homogeneous polymer within the common meaning of the term does not necessarily imply that it is also

homogeneous within the special meaning given in the description and also expressly required by the claimed subject-matter. The further submission of the appellant that according to the teaching of the patent the molecular weight is also correlated to the iodine number does not imply either that the same iodine number might be indicative of the same molecular weight distribution, let alone of the same phase separation characteristics.

In addition, there is no evidence or indication relating to the molecular weight distribution or to the phase separation characteristics of the polybutene Napvis that would allow the conclusion that the polybutene of the delivered product would have shown no significant phase separation phenomena by decantation or chromatography on a fibrous support as required by the claimed subject-matter. On the contrary, in document E5, which is primarily concerned with the family of polybutenes Napvis sold by BP Chimie, this same company proposes for the impregnation of insulating papers of electric cables or condensers the use of different mixtures called "stabilisés" or "non-migrants" different from the polybutenes Napvis and forming the family of compositions Napelec (page 7/8, penultimate paragraph); this proposal constitutes an indication that the polybutenes Napvis would not be sufficiently stable and would, at least to some extent, migrate when applied on insulating paper used in electronics and that therefore these polybutenes would also show significant phase separation phenomena at least on the fibrous support constituted by the mentioned insulating paper.

5.3.4 In addition, the appellant has advanced no argument during the proceedings that would support the obviousness of the claimed feature relating to the phase separation characteristics of the polybutene. As a matter of fact, and as stressed by the respondent, this feature constitutes an extrinsic feature and there is no indication or evidence that the skilled person would have considered the corresponding characteristic of the product Sepigel H400 as relevant and there is also no hint in the prior art that would have suggested the skilled person to alter the features of the composition and more particularly the molecular weight distribution of the composition so as to satisfy the claimed requirement relating to the phase separation of the polybutene by decantation or chromatography on a fibrous support, let alone the improvements achieved therewith relating to the prevention of phase separation and therefore of demixing and segregation of the composition by chromatographic effect on the fibrous structural components of the cable (page 5, lines 5 to 7 and page 6, lines 42 to 50 of the patent specification).

In view of the above, the appellant has failed to discharge the burden of proof that the skilled person, following the obvious approach mentioned above, would inevitably have arrived at a cable with a composition including a polybutene having a molecular weight distribution such that the phase separation characteristics required by the claimed subject-matter are satisfied or that the skilled person would have considered modifying the cable, and in particular the hydrogen-absorbing composition, so as to satisfy the

phase separation characteristics required by the claimed subject-matter.

- 5.3.5 In view of the conclusion in the latter paragraph, there is no need to address whether or not the obvious approach mentioned above would have resulted in an optical fibre cable having a polybutene satisfying the viscosity characteristics after ageing required by claim 1 as also disputed by the parties during the proceedings.
- 5.4 The Board concludes that the line of argument of the appellant and based on the public prior use of the product Sepigel H400 is insufficient to render obvious the subject-matter of claim 1 of the auxiliary request within the meaning of Article 56 EPC 1973. The same applies with regard to dependent claims 2 to 16 of the auxiliary request by virtue of their dependency on claim 1.
- 5.5 At the end of the proceedings the appellant restricted "its complete case on the issue of inventive step" to the prior use as closest state of the art (see letter dated 22.08.2008, first paragraph), i.e. other alternative lines of argument previously submitted were no longer maintained by the appellant. In addition, during the appeal proceedings the appellant contested neither the respondent's view that the claimed subject-matter also involves an inventive step when starting with document D3 as alternative closest state of the art, nor the opposition division's conclusion on inventive step with regard to the remaining prior art documents on file.

6. In view of the above conclusions and considerations, the Board concluded during the second of the oral proceedings that the patent as amended according to the first auxiliary request and the invention to which it relates met the requirements of the EPC and that consequently the patent was to be maintained as amended by the respondent according to the first auxiliary request.

7. *Apportionment of costs*

7.1 *The decision in case T 847/93*

The parties agreed during the second of the oral proceedings that the legal issues surrounding the question of apportionment of costs should be governed in the present case by the decision in case T 847/93 (point 3 of the reasons). In that case, the corresponding Board found that the statement of grounds of appeal made no substantiated criticism of the reasons for the decision of the opposition division but relied only on new prior art documented in said statement. On the one hand, mitigating circumstances for the late filing of new facts and evidence were put forward by the appellants, i.e. that they had become aware of the new facts and evidence only after the decision under appeal had been handed down. The Board held those circumstances to be credible. However, on the other hand, it was also credible that the respondent had seen its costs increase following the introduction of an entirely fresh case, as compared to its costs if the facts and pieces of evidence had not been filed at a late stage. Therefore, the Board decided for reasons of equity to order an apportionment

of costs so that the appellant should pay to the respondent 50% of the costs which would be incurred by the respondent in the future oral proceedings and taking of evidence before the opposition division and in any subsequent appeal as under Article 104(1) EPC 1973.

7.2 *The second opposition procedure*

The Board notes that the appellant has not challenged the opposition division's award of 75% of the respondent's costs for the second opposition procedure that was made pursuant to Article 104(1) EPC 1973. The Board therefore is not in a position to alter that award to the respondent's disadvantage. The Board, on the other hand, sees no reason to increase that award either. The late filing of documents E6 and E6a may have resulted in considerable additional work for the patentee and the allegation of prior use made in the statement of grounds of the first appeal proceedings may have led to the remittal of the case to the opposition division and the examination of the prior use in the second opposition procedure. However, the respondent, while claiming that the opponent never justified in any manner the reasons for the delay in the submission of the new evidence, has not specifically contested the circumstances relied on by the appellant as mitigating, namely that during the first opposition procedure it had not been aware of the public prior use. It should also be noted that the appellant maintained that it had not been involved in the prior use relied on (see point 20.2 of the decision under appeal). The Board considers that these mitigating circumstances are credible and weigh heavily

in favour of the appellant. That is the reason why the Board does not hold it to be equitable to increase the amount of costs awarded by the opposition division.

7.3 *The oral proceedings of 26 June 2008*

In its annex to the summons to the oral proceedings of 26 June 2008, the Board mentioned the allegation of added subject-matter, the public character of the alleged prior use and the apportionment of costs as the three main issues to be addressed in those proceedings (point V above). It noted that, in the decision under appeal, the opposition division had found that the respondent had implicitly agreed to the admission into the proceedings of the ground for opposition under Article 100(c) EPC 1973. The Board made no reference to documents E6 and E6a, late filing of which the opposition division had taken into account in the respondent's favour in the apportionment of costs in the second opposition procedure.

Against this backdrop the Board considers it pertinent for the question of apportionment of costs that the appellant's prior use allegations produced a virtually new case. On the other hand, the Board repeats that it deems the opponent's reliance on mitigating circumstances to weigh heavily in its favour. The Board not being bound by any previous cost decision regarding the oral proceedings of 26 June 2008 notes that the appellant has not contested an award being made in the respondent's favour of 50% of the costs related to those oral proceedings and apportions the costs accordingly.

7.4 *The oral proceedings of 14 May 2009*

The annex to the summons to the first of the oral proceedings in the present appeal procedure did not mention inventive step as an issue to be discussed during the oral proceedings of 26 June 2008 (point V above). Those proceedings that started shortly after 9 o'clock (9:07 hrs.) in the morning were terminated after 4 o'clock (16:09 hrs.) in the afternoon. The Board had anticipated that a one-day hearing would not have provided enough time to also address inventive step should a discussion of that topic become necessary. Furthermore, the appellant, in the statement of grounds of appeal, had not discussed inventive step and the respondent, in its reply (see point 2.20), had merely made a general reference to "all the submissions already made in the previous stages of the opposition and appeal proceedings". Both because of the time constraints and the fact that no written submissions on inventive step had been made in the course of the present appeal proceedings that far, the Board, in the oral proceedings of 26 June 2008, considered a second hearing to be necessary. The need for appointing further oral proceedings thus has not been triggered by the appellant. Whether or not the respondent was right in saying that the appellant should have been prepared to discuss inventive step during the oral proceedings of 26 June 2008 is therefore not relevant in this context.

As a consequence, the Board does not consider it to be equitable to order the appellant to pay part or all of the costs connected with the second oral proceedings held on 14 May 2009 to the respondent.

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 with the order to maintain the patent in the following version:
 - description: pages 2, 2a and 3 to 12 filed during the oral proceedings of 14 May 2009,
 - claims: No. 1 to 16 of the first auxiliary request filed during the oral proceedings of 26 June 2008 and
 - drawings: figures 1 to 6 as granted.
3. The costs shall be apportioned so that the appellant shall bear its own costs and shall pay to the respondent 75% of the respondent's costs for the second first-instance opposition procedure and 50% of the costs incurred by the respondent in relation to the oral proceedings of 26 June 2008. The respondent shall bear the remainder of its costs.

The Registrar:

The Chairman:

M. Kiehl

A. G. Klein