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**Datasheet for the decision
of 15 April 2010**

Case Number: T 0680/08 - 3.2.05

Application Number: 02738158.1

Publication Number: 1395407

IPC: B29B 7/00

Language of the proceedings: EN

Title of invention:

Method of compounding a multimodal polyethylene composition

Patentee:

INEOS Manufacturing Belgium NV

Opponents:

Borealis Technology OY

Coperion GmbH

TOTAL PETROCHEMICALS RESEARCH FELUY S.A.

Headword:

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Relevant legal provisions:

EPC Art. 54, 87

RPBA Art. 13

Relevant legal provisions (EPC 1973):

-

Keyword:

"Entitlement to priority (main request, no; auxiliary request, yes)"

"Novelty - no (main request)"

"Admissibility of auxiliary request - yes"

Decisions cited:

G 0001/03, G 0002/98, G 0003/93, T 1443/05, T 0494/03,

T 0136/01, T 0118/99

Catchword:

-



Case Number: T 0680/08 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 15 April 2010

Appellant:
(Patent Proprietor) INEOS Manufacturing Belgium NV
Scheldelaan 482
BE-2040 Antwerpen (BE)

Representative:
Smith, Julian Philip Howard
Compass Patents LLP
120 Bridge Road
Chertsey
Surrey KT16 8LA (GB)

Respondent I:
(Opponent 01) Borealis Technology OY
P.O. Box 330
FI-06101 Porvoo (FI)

Representative:
Kador, Ulrich
Kador & Partner
Corneliusstrasse 15
D-80469 München (DE)

Respondent II:
(Opponent 02) Coperion GmbH
Theodorstrasse 10
D-70469 Stuttgart (DE)

Representative:
Rau, Manfred
Rau, Schneck & Hübner
Patentanwälte
Königstrasse 2
D-90402 Nürnberg (DE)

Respondent III:
(Opponent 03) TOTAL PETROCHEMICALS RESEARCH FELUY S.A.
Zone Industrielle C
BE-7181 Seneffe (Feluy) (BE)

Representative: -

Decision under appeal: Decision of the Opposition Division of the European Patent Office posted 25 January 2008 revoking European patent No. 1395407 pursuant to Article 101(2) EPC.

Composition of the Board:

Chairman: W. Zellhuber
Members: S. Bridge
M. J. Vogel

Summary of Facts and Submissions

- I. The appellant (patent proprietor) lodged an appeal against the decision of the Opposition Division revoking the European patent No. 1 395 407.

- II. Respondents I, II and III (Opponents O1, O2 and O3) each filed an opposition against the patent as a whole based on Article 100(a) EPC (lack of novelty, Article 54 EPC, and lack of inventive step, Article 56 EPC). Respondents II and III further invoked the ground of opposition in Article 100(b) EPC (Article 83 EPC). Finally, respondent III also invoked the ground of opposition in Article 100(c) EPC (Article 123(2) EPC).

- III. The Opposition Division held that the subject-matter of claim 1 of the patent as granted was not entitled to the priority from European patent application D0 = EP 01 202 289 (filed 14 June 2001 and published as document D1 = EP-A-1 266 738 on 18 December 2002) and that claim 1 of the patent as granted was not new pursuant to Article 54(3) EPC with respect to document D1, the subsequent publication of the priority document.

- IV. Oral proceedings were held before the Board of Appeal on 15 April 2010 in the absence of respondent I, whose representative had previously informed the Board that they would not attend.

- V. The appellant requested that the decision under appeal be set aside and that the patent in suit be maintained on the basis of claims 1 to 12 filed as main request on

12 March 2010 or on the basis of claims 1 to 12 filed as first auxiliary request during the oral proceedings.

VI. The respondents requested that the appeal be dismissed.

VII. Claim 1 according to the main request reads as follows:

"1. Method of compounding a multimodal polyethylene composition in a compounding device, wherein

a) the total residence time of the polyethylene composition in the compounding device is at least 3 minutes,

b) the total drive specific energy (SEC) applied on the polyethylene composition is from 0.330 to 0.415 kWh/kg,

c) optionally, a specific cooling energy (SCC) of at most 0.200 kWh/kg is applied on the polyethylene composition,

d) the total specific energy, which is the difference between the total drive specific energy SEC and any specific cooling energy SCC, applied on the polyethylene composition is from 0.220 to 0.330 kWh/kg".

VIII. Claim 1 according to the first auxiliary request differs from claim 1 according to the main request in that the disclaimer "but excluding the value 0.330 kWh/kg" is appended to feature b).

IX. The following documents are referred to in the present decision:

D0 = EP 01202289.3 - the patent in suit claims priority from this document

D1 = EP-A-1 266 738 - the publication of document D0

D23 = "Werkstoffprüfung - Prüfbericht Nr. A08T070K0", 30 October 2008, Deutsches Kunststoff-Institut

X. The arguments of the appellant in the written and oral proceedings can be summarised as follows:

Main Request

The difference between the lower limit for SEC of 0.325 kWh/kg disclosed in the priority document D0 and the value of 0.330 kWh/kg specified in claim 1 of the main request only represents a few percent and is therefore of a similar order of magnitude as other random factors such as seasonal temperature variation in the polymer powder at the inlet to the compounding equipment or the variation in efficiency of gear boxes and motor systems. Therefore, this difference is of no technical significance.

Similarly, the examples set out in tables 1 and 2 of the patent in suit prove that the process of compounding multimodal polyethylene is subject to large natural variations in the number of gels so that a few percent difference in SEC is not detectable.

Furthermore, the examples are not directly comparable, because of additional changes in other parameters - such as residence time and/or the use of different polymers - which also have a significant effect on the number of gels/kg. It is therefore not possible to attribute the difference in the number of gels/kg directly to a change in SEC.

In addition, there is no specific or technical reason for the change in the lower limit for the SEC. The change may be attributed to "sloppiness" when drafting the application.

In the present case the range 0.330 to 0.415 kWh/kg is similar to the range 0.325 to 0.415 kWh/kg in the priority document D0 so that

- it may be considered to be directly and unambiguously derivable from that priority document, and
- the criteria for selection inventions are not satisfied, because of the closeness of the value 0.330 to the value 0.325.

Thus the two ranges relate to the same invention.

In addition, adverse consequences of an incorrect priority decision, as considered by the Enlarged Board of Appeal in their opinion G 2/98 (OJ EPO 2001, 413), do not arise in the case in suit for the following reasons. A hypothetical third party claiming a range from 0.330 to 0.415 kWh/kg, first filed in the priority interval of the present patent, would not be novel over

the priority document D0, because the ranges are too similar for the criteria for a selection invention to be met.

Therefore, the present case is different from the situation considered in the Enlarged Board of Appeal opinion G 2/98 (section 8) which "discusses cases where there is an extra inessential feature or inessential modification in the later claim compared with the priority document" (fax received 12 March 2010, page 2, paragraph 2).

Decision T 494/03 (not published in OJ EPO) is considered to be analogous to the present case. In decision T 494/03 there was no evidence that the increased lower bound value was of significance and the claimed priority was accepted.

Figure 2.1 of document D23 discloses that an applied energy of 0.330 kWh/kg would bring the tested multimodal polyethylene composition close to its decomposition temperature and thus towards a temperature which is not relevant to the present case.

In consequence, the subject-matter of claim 1 according to the main request is entitled to the priority of document D0 (Article 87(1)(b) EPC).

Should the subject-matter of claim 1 according to the main request not be entitled to the priority of document D0, the appellant concedes that document D1 would constitute novelty destroying state of the art under Article 54(3) EPC.

First Auxiliary Request

The first auxiliary request was filed in consequence of the Board's decision concerning the validity of the priority, which decision could not have been anticipated in that form.

The disclaimer added to claim 1 according to the first auxiliary request satisfies the requirements of the Enlarged Board of Appeal decision G 3/01 (OJ EPO 2004, 413) in that it establishes novelty with respect to document D1.

Therefore, the first auxiliary request should be admitted (Article 13 RPBA).

XI. In the written procedure, respondent I argued essentially as follows:

Main Request

The lower bound value of 0.330 kWh/kg of the range in feature b) of claim 1 according to the main request is not explicitly disclosed in the priority document D0 and cannot be derived directly and unambiguously by the skilled person, even using common general knowledge, from the priority document D0 as a whole. Similarly, the priority document does not disclose the implied SCC upper limit of 0.110 kWh/kg.

In accordance with the Enlarged Board of Appeal opinion G 2/98, the required strict standard in the disclosure test for the "same invention" leads to the conclusion that the priority is invalid.

Therefore, the subject-matter of claim 1 according to the main request is not entitled to the priority of document D0 (Article 87(1)(b) EPC).

In consequence, document D1 constitutes state of the art under Article 54(3) EPC which is novelty destroying for the subject-matter of claim 1 according to the main request. The latter also does not meet the requirements of a selection invention.

XII. The additional arguments of respondent II in the written and oral proceedings can be summarised as follows:

Main Request

The closest disclosed value in document D0 is 0.325 kWh/kg which differs from the now claimed lower bound value of 0.330 kWh/kg by 0.005 kWh/kg. According to figure 2.1 of document D23, an applied energy of 0.330 kWh/kg would bring the tested multimodal polyethylene composition critically close to its decomposition temperature. It follows that even a small change in applied energy, of say 5 Wh/kg, may have a decisive technical effect concerning the thermal destruction, or not, of the multimodal polyethylene composition.

The Examples disclosed tables 1 and 2 of the patent in suit (as published) fall under the scope of the claims and show that a differences in applied energy have a technical effect.

Furthermore the person skilled in the art would not make such a change in applied energy if there were no good reason to do so.

In decision T 118/99 (not published in OJ EPO), the difference of one unit was found to be technically relevant for the claimed process (page 10, paragraph 2). In decision T 136/01 (not published in OJ EPO), the lower bound was also not disclosed in the priority document. Both of these decisions consider that there is only one invention with one - invalid - priority claim. Separate priorities for different parts of the range are neither considered in the case law, nor in Enlarged Board of Appeal opinion G 2/98.

In decision T 494/03, the lower bound was disclosed in the priority document so that this case differs from the present situation.

Decision T 1443/05 (not published in OJ EPO) concerns the addition of a disclaimer in the subsequent European application for which the priority was considered to be invalid (section 4.1). However, the published priority document was considered as novelty destroying state of the art under Article 54(3) EPC (section 4.2).

Therefore, the subject-matter of claim 1 according to the main request is not entitled to the priority of document D0 (Article 87(1)(b) EPC).

In consequence, the subject-matter of claim 1 according to the main request lacks novelty with respect to document D1 under Article 54(3) EPC.

First Auxiliary Request

The first auxiliary request is late filed and there is no basis for the disclaimer in the application as filed. Furthermore, the disclaimer might be relevant for inventive step, which is not allowable according to the Enlarged Board of Appeal decision G 1/03 (OJ EPO 2004, 413) - inventive step being beyond the scope of the present proceedings.

Therefore, the first auxiliary request should not be admitted (Article 13 RPBA).

XIII. The additional arguments of respondent III in the written and oral proceedings can be summarised as follows:

Main Request

Enlarged Board of Appeal opinion G 2/98 argues that legal certainty cannot be achieved by considering "the technical significance" of the technical difference between the patent and its claimed priority. In particular, there is no clear definition of how much change could be permitted. In the present case the change in the lower bound value of SEC represents 5.5% of the claimed range, which is considered to be significant.

Enlarged Board of Appeal opinion G 2/98 also argues in terms of adverse effects on third parties. In the present case, a third party should still be able to claim a purposive selection of the range 0.325 to 0.330 kWh/kg. Insofar as adverse effects are

considered, it is noted that a third party has no choice, whereas the appellant had a choice when drafting the application with respect to the claimed priority.

In both decisions T 118/99 and T 136/01, the mere fact that there is a technical difference was enough to lose the priority claim.

When comparing examples 1 and 3, 2 and 5, 3 and 6 or 4 and 5 disclosed in the patent in suit, the difference of respectively, 0.006, 0.003, 0.006 and 0.007 kWh/kg in SEC produces significant differences in white spot dispersion, gel count and pigment distribution. Thus even a small difference in applied energy causes a change in the final product, so that the process in the claimed priority application is different from the one in claim 1 of the main request. The invention in the patent in suit is not the "same invention" as that disclosed in the priority document.

Therefore, the subject-matter of claim 1 according to the main request is not entitled to the priority of document D0 (Article 87(1)(b) EPC).

Furthermore, the subject-matter of claim 1 according to the main request lacks novelty with respect to document D1 under Article 54(3) EPC.

First Auxiliary Request

The appellant could have anticipated the outcome of the question of the validity of the priority document for claim 1 according to the main request on the basis of

the preliminary opinion issued by the Board when inviting to oral proceedings.

Therefore, the late filed first auxiliary request should not be admitted (Article 13 RPBA).

Reasons for the Decision

1. Issues relating to priority

The subject-matter of claim 1 of the main request corresponds to the disclosure in the priority document D0 with the exception of the explicit mention of the value of total drive specific energy (SEC) of 0.330 kWh/kg.

In consequence, in claim 1 of the main request, the only contested issue is the validity of the claim to priority in view of the value 0.330 kWh/kg used as lower boundary of the total drive specific energy (SEC) range of feature b).

1.1 Same invention

According to Article 87(1)(b) EPC, a claim to priority can only be validly claimed in respect of the "same invention".

Claim 1 according to the main request concerns a process whose value of total drive specific energy is constrained to lie within the particular range of values from 0.330 to 0.415 kWh/kg. The priority document D0 discloses that "in the method according to

the invention, the total drive specific energy (SEC) applied on the polyethylene composition is preferably at least 0.325 kWh/kg" and that "the total drive specific energy (SEC) applied on the polyethylene composition preferably does not exceed 0.415 kWh/kg" (page 4, lines 3 to 8).

When filing the patent in suit, the lower bound value of the range of total drive specific energies was therefore increased from 0.325 kWh/kg to 0.330 kWh/kg, i.e. to a value which lies inside the range disclosed in the priority document. On the basis of this disclosure, the priority, *if claimed accordingly*, would be valid for methods wherein the total drive specific energy is chosen to be in the range of 0.325 to 0.415 kWh/kg and thus includes *all* methods whose actual value for the SEC is *anywhere* within the range of 0.325 to 0.415 kWh/kg, i.e. also for SEC values which were not mentioned explicitly in the priority document such as 0.330 kWh/kg.

However, before a conclusion concerning the validity of the priority can be arrived at, it is necessary to consider the arguments against it.

1.2 Technical effect

One aspect to be considered is whether the technical effect associated with SEC values from 0.330 to 0.415 kWh/kg differs from the one associated with SEC values from 0.325 to 0.330 kWh/kg.

It was proposed on the part of the respondents that when comparing the examples set out in tables 1 and 2

of the patent in suit, differences in applied SEC comparable to the 0.005 kWh/kg increase produce significant differences in properties such as white spot dispersion, gel count and pigment distribution.

However, these examples are not directly comparable, because of additional changes in other parameters, such as residence time and/or the use of different polymers. For example, example 1 involves 60.3 parts by weight of a polyethylene having a melt index of 772 g/10min, examples 3 and 4, 59.5 parts by weight of a polyethylene having a melt index of 581 g/10min and example 5, 49.0 parts by weight of a polyethylene having a melt index of 398 g/10min (paragraphs [0047], [0051] and [0056] of the published version of the patent in suit). The resulting differences in white spot dispersion, gel count and pigment distribution are therefore not necessarily primarily due to changes in applied SEC. Furthermore, taken as a whole, the examples set out in tables 1 and 2 of the patent in suit show that the claimed processes of compounding multimodal polyethylene are naturally subject to variations in properties such as the number of gels.

The Board therefore considers that, on the basis of these examples alone, it is not possible to attribute a given property - such as, for example, the difference in the numbers of gels/kg - directly to a change in SEC alone.

It was also proposed on the part of the respondents that in view of figure 2.1 of document D23, an applied energy of 0.330 kWh/kg would bring the tested multimodal polyethylene composition critically close to

its decomposition temperature, such that even a small change in applied energy might have a decisive technical effect concerning the thermal destruction, or not, of the multimodal polyethylene composition.

The method claimed in the present invention concerns compounding a multimodal polyethylene composition, which process loses its purpose should the composition be thereby heated to destruction. The skilled person would therefore only use the claimed compounding method without operating near the thermal destruction of the multimodal polyethylene composition.

It was further alleged on the part of the respondents that no change would be made to the claimed range of SEC values without good reason. However, no such reason or proof of a change in technical effect was supplied.

Furthermore, it was alleged on the part of the appellant - and not denied by the respondents - that the 0.005 kWh/kg increase in the lower bound value of SEC is allegedly comparable to other sources of natural variations in applied energy such as temperature fluctuations due to the seasons or efficiency variations in mechanical agitators, motors and gearboxes.

The Board therefore concludes that there is no proof that the increased SEC lower bound value of 0.330 kWh/kg results in any identifiably other technical effect compared to the technical effect associated with the larger range disclosed in the priority document.

1.3 Enlarged Board of Appeal Opinion G 2/98

It was suggested on behalf of the respondents that, in view of the strict requirements set out in the Enlarged Board of Appeal opinion G 2/98, the mere fact that the value 0.330 kWh/kg was not mentioned in document D0 was enough to lose the priority claim for the whole of the subject-matter of claim 1 of the main request.

As the Board has not found any indication in opinion G 2/98 that the Enlarged Board of Appeal explicitly considered the particular case of a process in which a value is constrained to lie inside a range whose lower bound has been marginally moved inwards, the response to the above argument requires a closer look at the reasoning used in that Enlarged Board of Appeal opinion.

In arriving at its conclusions in opinion G 2/98, the Enlarged Board of Appeal took into account possible adverse effects of alternative assessments of the validity of a claimed priority.

In the present case, denying the claim to priority for the subject-matter of claim 1 across the whole range of SEC values would lead to the following adverse effect:

A third party could file an application for a process claiming the SEC upper bound value of 0.415 kWh/kg in the interval between the filing of the priority document D0 and of the filing of the application for the patent in suit. Such a document, once published, would form prior art according to Article 54(3) EPC for the upper bound value in the patent in suit. The

proprietor would therefore be effectively forced to restrict his claim to exclude this upper bound, although he was the first to disclose it in his own priority document D0.

The Board considers that this goes against the principle of fairness, as the appellant would effectively be punished for increasing the lower bound value - a measure not foreseen anywhere in the EPC.

It was further argued on behalf of the respondents that the appellant had a choice when drafting the application with respect to the claimed priority. However, this does not make the above adverse effect any more acceptable.

1.4 Other decisions

Reference was made on behalf of the respondents to decisions T 1443/05, T 118/99, T 136/01 and T 494/03.

Decision T 1443/05 concerned the addition of a disclaimer in the subsequent European application for which the priority was considered to be invalid (section 4.1). Although some examples did not contain the substance "CMIT", the application as filed did not contain any indication from which the skilled person could directly and unambiguously derive the disadvantages of CMIT and the consequent exclusion of CMIT from the invention. The situation is therefore different from the present case.

In decision T 118/99 (point 3.2), the Board considered that it was implicitly stressed that the difference of

one unit is technically relevant for the claimed process so that the residence times are technically different. In decision T 136/01 (point 3.3), evidence was provided to the effect that the change in the lower end point of the temperature range has direct consequences on the polymers obtainable by the claimed treatment. In decision T 494/03, the increased lower bound value was already explicitly disclosed in the priority document and there was no evidence that the difference is of significance. Therefore, the cases underlying these decisions differ from the present situation.

1.5 Conclusion

The Board therefore considers that with the exception of the explicit reference to the particular SEC lower bound value of 0.330 kWh/kg, the subject-matter of claim 1 of the main request concerns the "same invention" as that disclosed in the priority document D0.

2. Main Request

2.1 Entitlement to priority

It is an undisputed fact that the value of 0.330 kWh/kg is not explicitly mentioned in the priority document D0.

As the lower bound value of SEC of 0.330 kWh/kg cannot be directly and unambiguously derived from document D0, the subject-matter of claim 1 according to the main request - insofar as a method carried out at the lower

bound value of 0.330 kWh/kg is concerned - is not entitled to the priority of document D0 (Article 87(1)(b) EPC).

2.2 Novelty with respect to document D1, Article 54(3) EPC

Document D0 was filed 14 June 2001 and published as document D1 on 18 December 2002. The designated contracting states correspond to those of the patent in suit. In consequence, document D1 belongs to the state of the art under Article 54(3) EPC for all designated contracting states of the patent in suit.

In accordance with opinion G 3/93 (OJ EPO 1995, 018) of the Enlarged Board of Appeal, a priority document which is published during the priority interval belongs to the state of the art for the later European application under Article 54 EPC insofar as the claim to priority is not valid. For the subject-matter of claim 1 of the main request, the claim to priority is not valid for a method carried out at the particular SEC lower bound value of 0.330 kWh/kg.

Claim 3 of document D1 refers back to claim 1 and thereby discloses a method of compounding a multimodal polyethylene composition in a compounding device, wherein

- a) the total residence time of the polyethylene composition in the compounding device is at least 3 minutes,
- b) the total drive specific energy (SEC) applied on the polyethylene composition is from 0.240 to 0.450 kWh/kg,

- c) optionally, a specific cooling energy (SCC) of at most 0.200 kWh/kg is applied on the polyethylene composition,
- d) the total specific energy, which is the difference between the total drive specific energy SEC and any specific cooling energy SCC, applied on the polyethylene composition is from 0.220 to 0.330 kWh/kg.

The subject-matter of claim 1 of the main request for a method carried out at a SEC value of 0.330 kWh/kg does not meet the requirements of a selection invention, because the value of 0.330 kWh/kg is close to the value of 0.325 kWh/kg disclosed in paragraph [0011] of document D1. Furthermore, as argued above in point 1.2, there is no proof that an SEC value of 0.330 kWh/kg gives rise to any identifiably other technical effect than that associated with the larger range disclosed in document D1. Therefore, at the SEC value of 0.330 kWh/kg, the subject-matter of claim 1 of the main request does not constitute a purposive selection giving rise to any new technical teaching.

In consequence, the subject-matter of claim 1 according to the main request is not novel with respect to document D1 under Article 54(3) EPC.

3. First Auxiliary Request

3.1 Admissibility

The first auxiliary request differs from the main request in that a disclaimer for the SEC value of 0.330 kWh/kg is introduced into feature b) of claim 1.

This first auxiliary request, filed by the appellant during the oral proceedings, is regarded as being intended to deal with the lack of novelty under Article 54(3) EPC of the main request with respect to the published priority document D1. Therefore, this is an aspect which is in accordance with one of the requirements concerning disclaimers set out in Enlarged Board of Appeal decision G 1/03.

Although a similar argument concerning the validity of the priority had already been raised by the Board in the summons to oral proceedings, the arguments concerning the lack of novelty arose in this form for the first time during the oral proceedings.

Furthermore, the amendment to claim 1 merely involves a disclaimer for the value not enjoying the priority of document D0 and, with respect to the decision under appeal, does not raise issues which the Board or the other parties cannot reasonably be expected to deal with without adjournment of the oral proceedings.

Thus, the Board is of the opinion that it is appropriate to exercise their discretion and admit the request into the procedure in accordance with Article 13 of the Rules of Procedure of the Boards of Appeal.

3.2 Entitlement to priority

The effect of the disclaimer is to exclude methods carried out at SEC values of 0.330 kWh/kg from the

subject-matter of claim 1 according to the first auxiliary request.

As concluded from the priority discussion in point 1 above, methods carried out at claimed SEC values other than 0.330 kWh/kg, i.e. the subject-matter of claim 1 according to the first auxiliary request, concern the same invention as is disclosed in document D0.

Therefore, the subject-matter of claim 1 according to the first auxiliary request is entitled to the priority of document D0 (Article 87(1)(b) EPC).

3.3 Document D1 and novelty

As the subject-matter of claim 1 according to the first auxiliary request is entitled to the claimed priority of document D0, document D1 does not belong to the prior art and is therefore not relevant for the assessment of novelty.

4. Remittal to the first instance

The decision under appeal only concerned the validity of the priority and the consequence that document D1 constitutes prior art. The Board's decision concerns that priority question and, as regards document D1, its direct consequences (novelty, admissibility of the first auxiliary request).

The examining division has not yet had the opportunity to consider the other requirements of the EPC.

It is therefore considered appropriate to remit the case to the first instance for further prosecution, in accordance with Article 111(1) EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance for further prosecution.

The Registrar:

The Chairman:

D. Meyfarth

W. Zellhuber