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

Case Number: T 0987/05 - 3.3.05

Application Number: 96937666.4

Publication Number: 0854841

IPC: C01G 33/00

Language of the proceedings: EN

Title of invention:

Niobium and tantalum pentoxide compounds

Patentee:

CABOT CORPORATION

Opponent:

H.C. STARCK GmbH & Co. KG

Headword:

Pentoxides/CABOT

Relevant legal provisions:

EPC Art. 123(2)

Relevant legal provisions (EPC 1973):

EPC Art. 54(1)(2)

Keyword:

"Admissibility of amendments (no): claimed subject-matter not directly and unambiguously derivable from the application as filed"

"Novelty (no): public prior use of claimed product proven beyond reasonable doubt"

Decisions cited:

G 0001/92, T 0263/05

Catchword:

-



Case Number: T 0987/05 - 3.3.05

DECISION
of the Technical Board of Appeal 3.3.05
of 14 October 2009

Appellant II:
(Patent Proprietor) CABOT CORPORATION
Two Seaport Lane
Suite 1300
Boston, Massachusetts 02210-2019 (US)

Representative:
Grünecker, Kinkeldey,
Stockmair & Schwanhäusser
Anwaltssozietät
Leopoldstrasse 4
D-80802 München (DE)

Appellant I:
(Opponent) H.C. STARCK GmbH & Co. KG
Im Schleeke 78-91
D-38642 Goslar (DE)

Representative:
Ackermann, Joachim
Postfach 11 13 26
D-60048 Frankfurt am Main (DE)

Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
3 June 2005 concerning maintenance of the
European patent No. 0854841 in amended form.

Composition of the Board:

Chairman: G. Raths
Members: B. Czech
S. Hoffmann
J.-M. Schwaller
C. Vallet

Summary of Facts and Submissions

I. The appeals are from the interlocutory decision of the opposition division concerning the maintenance of the European patent No. 0 854 841 in amended form.

II. In the contested decision, the opposition division inter alia took position on independent claims 5 and 6 as granted, which read as follows:

Claim 5: "*Niobium pentoxide powder characterized as (a) having a BET surface area less than 2 m²/g and a packed bulk density greater than 1.8 g/cc or (b) having a BET surface area greater than 2 m²/g and a packed bulk density less than 1.8 g/cc.*"

Claim 6: "*Tantalum pentoxide powder characterized as (a) having a BET surface area less than 3 m²/g and a packed bulk density greater than 3.0 g/cc or (b) having a BET surface area greater than 3 m²/g and a packed bulk density less than 3.0 g/cc.*"

III. The opponent had invoked inter alia a public prior use by virtue of sales of a tantalum pentoxide powder having a BET surface area and a packed bulk density as required by claim 6 as granted. The documents (D5-A to D5-H and D5-J to D5-O) cited in substantiation of this alleged prior use include the following:

D5A: Screen dump showing data relating to a Ta₂O₅ product

D5-B: "Dispatch note" of H.C. Starck GmbH & Co. KG of 16 June 1993

D5-C / D5-D: Copies of four purchase orders and translations thereof

D5-E to D5-H: Copies of four sales invoices and translations thereof

D5J: "Inspection Certificate 3.1.B" of H.C. Starck GmbH & Co. KG dated 06/10/1993

D5-K: "Dispatch note" of H.C. Starck GmbH & Co. KG of 16 June 1993

D5L: "Invoice" of H.C. Starck GmbH & Co. KG dated 16.06.93

In the contested decision, the opposition division found inter alia that the subject-matter of claim 6 as granted was novel in view of the cited prior art. Having regard to the alleged prior use of tantalum pentoxide, the opposition division came to the following conclusion (see the contested decision, point C.7 of the reasons):

"C.7) The testimony made by the witness at the oral proceedings cannot be used to assess the alleged prior use. As a consequence, in assessing the alleged prior use, reference should exclusively be made to the technical information which are explicitly indicated in prior use documents [...] D5A to D50. From these documents there is no evidence that respective samples of [...] tantalum oxide have been made available to the public. The connection and interpretation of the plurality of different product codes, order numbers and delivery numbers or dates provided in [...] D5A to D50 could not unambiguously substantiate and prove that the [...] tantalum pentoxide samples described in [...] D5-A were actually delivered and received by the [...]"

Japanese companies [...] and Asahi Optical. The basic evidence that the products shipped to the Japanese subsidiary of the Opponent were indeed those sold by the Japanese customers in discussion is the product code "7150" which also appears on the Japanese bills to said customers. However, this reference number was added in handwriting and no evidence is given that this addition was made at the time of sending the bills rather than years after when classifying these bills. In other words, the handwritten indication of the order code "7150" cannot prove that the sample according to D5A was actually obtained by Asahi Optical. The documents designated with [...] D5A to D50 merely show that there was an internal delivery of [...] a tantalum pentoxide from H.C. Starck GmbH in Germany to its subsidiary H.C. Starck-V Tech Ltd. in Japan ([...] Tokyo Office). A possible delivery from HC. Starck GmbH to its Japanese subsidiary cannot be regarded as being made available to the public. The delivery from the Opponent to its subsidiary cannot be considered as novelty-destroying. [...]"

- IV. In its statement of grounds of appeal, appellant II (the proprietor of the patent) contested the decision of the opposition division and requested that the patent be maintained as granted. It also filed several amended sets of claims as auxiliary requests.

- V. In its statement of grounds of appeal, appellant I (the opponent) maintained inter alia that the subject-matter of claim 2 of the patent as maintained by the opposition division (claim 2 according to the second auxiliary request then on file; identical in wording to

- claim 6 as granted) lacked novelty in view of the invoked prior use of tantalum oxide.
- VI. Under cover of its reply dated 23 May 2006, appellant II filed amended sets of claims as auxiliary requests 1 to 15, replacing the auxiliary requests previously on file. It rejected inter alia the novelty objection based on the prior use of tantalum pentoxide.
- VII. In its reply dated 29 May 2006, appellant I raised various objections concerning inter alia the allowability under Article 123(2) EPC of the claims according to the auxiliary requests filed under cover of the statement of grounds of appeal of appellant II.
- VIII. In its last written submission dated 8 September 2009, appellant II inter alia rebutted the objections raised by appellant I under Article 123(2) EPC.
- IX. Under cover of its last written submission dated 14 September 2009, appellant I filed a further experimental report. It criticised the number and nature of the auxiliary requests filed on 23 May 2006. It considered that several of the claims according to these requests were objectionable under Articles 123(2), 123(3) and/or 84 EPC. It also maintained its earlier novelty objection based on the alleged prior use of a tantalum pentoxide powder meeting the definition in claim 6 as granted.
- X. Oral proceedings were held on 13 October 2009. At the beginning of the oral proceedings, appellant II filed amended auxiliary requests 4 to 15 to replace the ones previously on file. Various objections under

Article 100(a) EPC against the independent process and product claims 1, 5, 6 and 7 as granted (main request) were extensively dealt with, inter alia lack of novelty of granted claim 6 in view of the alleged sales of the tantalum pentoxide referred to in document D5-A. Objections raised under Rule 80 and Article 123(2) EPC against the auxiliary requests were also addressed, inter alia having regard to the allowability of the amendment consisting in lowering the upper limit for the packed bulk density from "*less than 1.8 g/cc*" to "*less than 1 g/cc*" in some of the independent claims relating to Nb₂O₅ powders, alternative (b), as e.g. in claim 4 of auxiliary request 5.

At the end of the day, the oral proceedings were interrupted for deliberation, and the parties were then informed that the board's decision would be announced on the next day at 16:00 in room 108. On 14 October 2009, the board announced its decision at the advised time and location.

XI. The arguments of the parties, as far as they relate to issues dealt with in this decision, can be summarised as follows:

Appellant I (the opponent) held that the subject-matter of claim 6 as granted lacked novelty since a tantalum pentoxide powder as referred to in D5-A, which had a BET surface area of 3.58 m²/g and a packed bulk density (or Klopfdichte "KD") of 1.92 g/cm³ had been shipped by H.C. Starck GmbH & Co KG (appellant I, "Starck Germany" hereinafter) to its sales organisation in Japan H.C. Starck - V Tech ("Starck Japan" hereinafter), as evidenced by documents D5-B/D5-K, and had been

ultimately sold to the customer Asahi Optical in Japan, as evidenced by documents D5-C to D5-H, and D5-J and D5-L.

Appellant I also questioned the admissibility of the auxiliary requests in view of their relatively large number. It argued that the amendments made gave rise to objections under Articles 123(2)(3) and 84 EPC and that it was not always apparent to what extent they were occasioned by grounds of opposition.

Concerning the allowability of the amendments in the claims according to the auxiliary requests, appellant I argued inter alia that a niobium pentoxide powder with a BET surface area of less than $2 \text{ m}^2/\text{g}$ and a packed bulk density of less than $1 \text{ g}/\text{cm}^3$ was not disclosed in the application as originally filed. Therefore the amended independent claims directed at this subject-matter did not meet the requirement of Article 123(2) EPC.

Appellant II held that the documents submitted were not sufficient to prove beyond any doubt a public prior use of a tantalum pentoxide powder according to claim 6 as granted. In this connection, it referred to point C.7 of the reasons of the decision given by the opposition division (quoted under point III. hereinabove). Having regard to the evidence submitted, appellant II additionally pointed out, both in writing and at the oral proceedings, several aspects which in its view cast further doubts on the coherence of the evidence and on its conclusiveness having regard to the alleged public availability of a tantalum oxide powder according to claim 6 as granted before the priority date of the patent in suit.

Concerning the admissibility of the auxiliary requests appellant II essentially argued that the requests comprised clarifications and variations of relatively few amendments of a restricting nature.

Having regard to the lowering of the upper limit of the bulk density range in the independent claim directed at niobium pentoxide powder as comprised in several of the auxiliary requests, appellant II argued that this amendment was supported by page 13, lines 13 to 14 of the description of the application as filed, and was therefore allowable under Article 123(2) EPC.

XII. Appellant II (the proprietor of the patent) requested that the decision under appeal be set aside and that the patent be maintained as granted (main request) or, in the alternative, on the basis of one of the first to third auxiliary requests filed on 23 May 2006 or one of the fourth to fifteenth auxiliary requests filed at the oral proceedings.

Appellant I (the opponent) requested that the decision under appeal be set aside and that the patent be revoked.

Reasons for the Decision

Main request

1. Novelty - Claim 6 as granted
 - 1.1 The documents numbered "D5-.." were cited to prove that tantalum pentoxide according to claim 6, alternative (b) as granted, i.e. having a BET surface area greater than

3 m²/g and a packed bulk density less than 3 g/cm³, had been made available to the public before the priority date of the patent in suit (12.10.1995) by virtue of sales of a specific Ta₂O₅ powder having the claimed properties.

1.2 Document D5-A

1.2.1 Having regard to the technical characterisation of the specific Ta₂O₅ powder in question, appellant I essentially relied on document D5-A. D5-A is a screen dump (printout of a computer screen) displaying data retrieved from the internal product databases ("Produktregister") of Starck Germany (appellant II). It shows a set of technical and commercial data relating to a specific Ta₂O₅ material.

1.2.2 The said material is referred to as "Ta₂O₅ LT micron" and belongs to a lot having the number "930601" (see top data row).

1.2.3 The material is characterised inter alia by a "BET" value of 3,58. Moreover, FSSS values are also mentioned in D5-A (see top left field "Bemerkungen" and "FSSS" field in the lower right part of D5-A, 7th field from the bottom). BET surface areas and FSSS sizes are properties often used to characterise metal or metal oxide powders. These indications thus confirm the assertion of appellant I, that the material in question referred to in D5-A is a Ta₂O₅ powder with the given BET surface area.

1.2.4 Since in the field of metal oxide powders the surface area measured according to the well known BET method is

usually expressed in m^2/g , the board has no reason to doubt that the BET surface area value stored in the product database of appellant I is indeed displayed on screen (D5-A) in terms of m^2/g .

1.2.5 The board also has no reason to call into question the assertion of appellant I that the value of 1,92 displayed in the field "KD" of D5-A (lower right part, 7th field from the bottom) stands for tapped density ("Klopf-Dichte"), i.e. a packed bulk density in the sense of claim 1 of the patent in suit, which is a property often used to characterise oxide powders. More particularly, the board is not aware of another possible meaning of the acronym "KD" in the context of tantalum pentoxide. The fact that a KD value is indicated confirms that D5-A refers to a Ta_2O_5 powder. Having regard to the unit of the KD value indicated, the board notes that in Germany (seat of appellant I) density values are usually expressed in g/cm^3 , at least in the technical field concerned. Moreover, a packed bulk density value of $1.92 \text{ g}/\text{cm}^3$ is plausible in connection with Ta_2O_5 in powder form. Therefore, the board has no reason to doubt that the KD value stored in the product database of Starck Germany is indeed displayed on screen (D5-A) in terms of g/cm^3 .

1.2.6 In view of the total information content of document D5-A, the board is thus convinced that the data displayed relate to a specific lot (No. 930601) of Ta_2O_5 powder having a BET surface area of $3.58 \text{ m}^2/\text{g}$ and a packed bulk density of $1.92 \text{ g}/\text{cm}^3$, i.e. a tantalum oxide powder falling within the ambit of claim 6, alternative (b), as granted, that was at the disposal of Starck Germany.

- 1.2.7 The commercial data shown in D5-A in connection with the specified lot of Ta₂O₅ include a reference to the withdrawal ("Ausgang") of an amount of "200" from said lot no. 930601 for the client "Asahi Optical" on "16.06.1993".
- 1.3 Documents D5-K, D5-J and D5-L
- 1.3.1 These documents were cited to show that 200 kg of the specific material referred to in D5-A destined for the final customer Asahi Optical were shipped to Starck Japan (H.C. Stark - V Tech Ltd in Tokyo).
- 1.3.2 Document D5-J is a copy of an "Inspection Certificate 3.1.B" of Starck Germany dated "06/04/1993" and relating to "Our order No. 14 04641 3". The certificate displays analytical results obtained for a product designated as "Ta₂O₅ Grade HPC Micron". Also appearing on D5-J are the customer "Asahi Optical", the "Lot No. 930601", the "quantity delivered" of "200 kg" and the number "7150" referred to as "Your order No".
- 1.3.3 D5-K is a copy of a "Dispatch note" of Starck Germany dated 16 June 1993, addressed to Starck Japan, which according to appellant II is the Japanese distributor company for H.C. Starck products. The dispatch note bears the number "14 04641 3". The dispatch note relates to an order of "200 kg" "Ta₂O₅ Grade HPC Micron" destined for "Asahi Optical". Under the heading "Signum" the number "7150" is indicated and reference is made to "Lot 930601".
- 1.3.4 Document D5-L is a copy of an "Invoice" of Starck Germany addressed to Starck Japan dated "16.06.93" and

referring to "Order no. 14 4641/3" (see upper right part of D5-L). The invoice concerns the shipment of 200 kg of "TA205 TANTALUM PENTOXIDE GRADE HPC MICRON" to Tokyo. It mentions "ASAHI OPTICAL" in the field "Delivery address". The number "7150" appears in the fields "your order" and "marking".

- 1.3.5 Having regard to the documents mentioned above, the board notes the following: The same lot number "930601" is referred to in D5-A, D5-J and D5-K. Hence, despite the different designations used ("LT micron" in D5-A and "Grade HPC Micron" in the other documents), there is no reason to assume (as done by appellant II) that the material described in D5-A could have been subjected to some kind of processing leading to modified BET surface area or packed bulk density (Klopfedichte "KD") values before the issuance of the certificate D5-J and the dispatch note D5-K. The invoice D5-L was issued on the same day as the dispatch note D5-K and refers to the same order numbers (14 4641 3 and 7150), to the same final customer (Asahi Optical) and to the same amount and type of product as documents D5-J and D5-K.

The board is thus convinced that the material referred to in documents D5-A, D5-J, D5-K and D5-L is actually one and the same material.

- 1.3.6 Considering the degree of coherence of the data contained in documents D5-A, D5-J, D5-K and D5-L, and in particular the relationship of the respective dates mentioned therein, the fact that they all refer to the same final customer ("Asahi Optical") and the same quantity ("200") of tantalum pentoxide product, the

board takes the view that there cannot be any reasonable doubt that 200 kg of the material referred to in D5-A were actually shipped from Starck Germany to Starck Japan on 16 June 1993 for further distribution to the final customer Asahi Optical. This finding is not affected by the fact pointed out by appellant II that there is no express reference in the dispatch note D5-K to the inspection certificate D5-J.

- 1.3.7 The question of whether or not the product referred to in D5-A has already been made available to the public by virtue of the commercial transaction (invoiced price of 4.592.000,00 Yen) between Starck Germany and its distributor company in Japan need not be decided since, as will appear from the following, the ultimate sales of the material to the final customer Asahi Optical (Asahi Kogaku Kogyo K.K.) anyway represent a novelty-destroying disclosure of the claimed tantalum pentoxide material.
- 1.4 Documents D5-C, D5-D and D5-E to D5-H
 - 1.4.1 These documents were cited to establish the ultimate sales of the material referred to in D5-A to the final customer Asahi Optical (Asahi Kogaku Kogyo K.K.).
 - 1.4.2 Each of documents D5-D and D5-C is a photocopy of two "purchase orders" from Asahi Kogaku Kogyo K.K. (Asahi Optical) addressed to Starck Japan (translated as "Starck Vitec AG") in Tokyo (compare company address in D5-L and in the translations of D5-C and D5-D). The four "purchase orders" (in chronological order) are dated 29.09.1993, 04.11.1993 (see D5D and translations), 27.12.1993 and 28.01.1994 (see D5C and translations).

They concern consecutive orders of 40 kg, 40 kg, 80 kg and 40 kg, respectively, of a product with the "product code 60367062" and the "order code 9614", which in each case is designated as "Tantalum oxide (T) 4N" and has a price of 26200 Yen/kg (see the translations into German). Each of the four purchase orders (see the original documents in Japanese) bears the handwritten number "7150" (which became "2150" in the translations). The latest "purchase order" of 28.01.1994 additionally bears the comment "final shipment" (see the translation into German: "Schlußlieferung"), which indicates that this order was the last order of a series of orders. Moreover, at least three of the purchase orders bear the inscription "(6759)", which is not clearly legible in the upper purchase order shown in D5-D.

- 1.4.3 Documents D5-H, D5-G, D5-F and D5-E are "sales invoices" respectively dated 30.10.1993, 01.12.1993, 01.02.1994 and 01.03.1994 (see originals in Japanese and their translations). The four invoices were issued by Starck Japan in Tokyo ("Starck Vitec AG" in the translations) and addressed to Asahi Kogaku Kogyo K.K. (Asahi Optical). All four bear an invoice number "6759-" and concern four consecutive deliveries of, respectively, 40 kg, 40 kg, 80 kg and 40 kg of a product designated as "tantalum oxide (T) 4N" for a price of 26200 Yen/kg (see the translations into German). All four invoices additionally bear the inscription "(6759)" and two of them (see D5H and D5G) bear the handwritten number "7150" (which became "2150" in the translations). Each invoice refers to a delivery number and delivery date (two columns at the left).

1.4.4 Concerning the data indicated in the two series of documents D5-C/D5-D and D5-E to D5-H, the board *inter alia* notes the following:

- i) the two companies (Starck Japan and Asahi Kogaku Kogyo) involved in the documented transactions are the same in each case;
- ii) the dates specified in the two series of documents and their order in time correspond to each other respectively (although according to D5H the first delivery was earlier than foreseen in D5D);
- iii) the product designation, price and amounts also match in the two series of documents; and
- iv) the inscription "(6759)" is almost omnipresent.

In view of the high degree of coherence of the data displayed in the two series of documents D5-C/D5-D and D5-E to D5-H, the board considers it established beyond reasonable doubt that in 1993/1994, i.e. before the priority date of the patent in suit, Asahi Kogaku Kogyo K.K. bought and received a material designated as "Tantalum oxide (T) 4N" in four batches with a total amount of 200 kg.

1.4.5 In the absence of evidence to the contrary, the board considers that the sales in question were normal business transactions in the sense that they were not subject to any kind of confidentiality agreement between the two companies involved.

1.5 The product sold to Asahi Kogaku Kogyo K.K. was the Ta₂O₅ material referred to in D5-A.

1.5.1 As evidenced by documents D5-J, D5-K and D5-L, the marking "7150" is the order number under which Starck

Japan "internally" ordered and received from Starck Germany 200 kg of Ta₂O₅ out of the lot no. 930601 referred to in D5-A, this material being ultimately destined for the customer Asahi Optical in Japan. The number "7150" also appears in handwriting on all four purchase orders originating from this customer (see D5-C and D5-D) and on two of the invoices addressed to this customer (D5-G and D5-H). In the board's view, this cannot possibly be a coincidence, in particular when taking into account the coherence of the other data referred to in, on the one hand, D5-A and D5-J to D5-L, and in, on the other hand, D5-C/D5-D and D5-E to D5-H. These coherent data include in particular the dates specified and their order, the companies involved in the transaction, the nature and total amount of material involved. Under these circumstances, the board excludes the possibility that the number "7150" could have been applied to classify the documents according to another aspect of the transactions, e.g. by a customer number, as suggested by appellant II.

1.5.2 The board thus concludes that there is no reasonable doubt that the material sold and delivered to the ultimate customer Asahi Kogaku Kogyo K.K. in four consecutive batches of 40, 40, 80 and 40 kg was indeed the material referred to in D5-A, ordered and received "internally" by Starck Japan under the order number "7150".

1.6 Summarising, there is a convincing uninterrupted chain of proof corroborating the allegation of appellant I that the specific Ta₂O₅ powder referred to in D5-A has been made available to the public before the priority date of the patent in suit by virtue of sales of

substantial amounts of this material to the company Asahi Optical (Asahi Kogaku Kogyo K.K.) in Japan. A skilled person can determine the BET surface area and packed bulk density values of this particular powder by well known analytical methods and reproduce it without undue burden by adapting known preparation methods so as to obtain these values. No arguments to the contrary have been submitted by appellant II. Therefore, in accordance with the principles laid down in opinion G 0001/92 (OJ EPO 1993, 277, Conclusion), the sales to Asahi Optical made available to the public a tantalum powder with a BET surface area and a packed bulk density as required by claim 6 as granted.

1.7 The board also considered the further aspects which led appellant II to argue that the evidence cited was not sufficient to prove convincingly that tantalum oxide according to claim 6 became publicly available before the priority date of the patent in suit. However, the board considers that for the reasons given below, these aspects do not give rise to reasonable doubts strong enough to break the chain of proof set out above.

1.7.1 In the board's view, the reasons for which "7150" became "2150" in the translations of documents D5-C, D5-D, let alone in the translations of documents of D5-G and D5-H, are not apparent. The handwritten figure "7" appearing on the original documents in Japanese does not resemble a "2" at all. An example of a handwritten "2" can be found in document D5-C (see lower purchase order, delivery date "2/4", left bottom corner).

1.7.2 The board has no reason whatsoever to assume that the number "7150" was hand-written on the purchase orders and sales invoices at a much later stage, remote from the time of the business transaction concerned. Moreover, the said inscriptions establish the identity of the material ordered by and delivered to the ultimate client and the material shipped from Starck Germany to Starck Japan, irrespective of exact date on which they were written on the four purchase orders shown in D5-C and D5-D.

1.7.3 Appellant II also emphasised the following aspects:

- The order number "7150" used in the "internal" transaction between Starck Germany and Starck Japan only appears in hand-written form on the documents relating to the business transactions in Japan between Starck Japan and Asahi Optical; and
- the "product code", "order code", "order number" and product name used in the latter transactions differed from the ones used "internally" between Starck Germany and Starck Japan.

In the board's view, this particular handling and classification of orders received from customers and the subsequent invoicing is not something so peculiar that it would justify reasonable doubts with regard to the identity of the product referred to in D5-A and the product sold and delivered to Asahi Optical.

1.7.4 Considering the overall coherence of the (printed) data in the "purchase orders" and "sales invoices", with regard to the chronology of the orders and deliveries, the amounts concerned, the consistency in customer name and invoice numbering, and the corresponding customer's

order numbers/delivery numbers (although only partially visible in the Japanese original documents D5-E to D5-H), the fact that the number "7150" was only handwritten on two (D5-G and D5-H) out of four sales invoices does not mean that it would be impossible to allocate these documents to the corresponding purchase orders.

1.7.5 In view of the totality of the evidence on file in the present case and of its coherence, the fact that no proof of payment and no acknowledgement of receipt from the purchasing company have been filed is not sufficient to call into question the delivery chain of the material referred to in D5-A from Starck Germany to the ultimate customer Asahi Kogaku Kogyo K.K. In the present case, such specific evidence is not required to prove beyond reasonable doubt that the products ordered by the customer and billed (with reference to delivery dates) by the seller were indeed delivered to the customer company.

1.7.6 The answers to the questions of whether or not the handwritten mark "10/5" on D5-H concerns an amended delivery date and why only the latter document is marked with a paraph have no bearing on the board's foregoing findings.

1.7.7 For the board, there are no gaps in the chain of commercial transactions, so that it is established beyond any reasonable doubt that a product according to claim 6 as granted was ultimately sold to Asahi Kogaku Kogyo K.K.

1.8 The board therefore concludes that the subject-matter of claim 6, alternative (b), lacks novelty over the

tantalum pentoxide material made available to the public by virtue of the sales evidenced by documents D5A, D5-J to D5-L and D5-C to D5-H (Article 52(1) and 54(1)(2) EPC).

Auxiliary requests - Admissibility

2. The amendments in the claims according to the auxiliary requests 1 to 15 of appellant II restrict the ambit of the claims. Under the circumstances of the present case, the increased number of independent claims of the same category according to some of the auxiliary requests is not objectionable (see e.g. T 0263/05, OJ EPO 6/2008, 329, point 5. of the reasons and Headnote I, II.1 and II.2). The said amendments are thus not objectionable under Rule 80 EPC.

Some of the amendments in the claims according to the auxiliary requests 4 to 15 filed at the oral proceedings constitute an attempt to address objections under Articles 123(2)(3) and 84 EPC raised in writing by appellant I in its last written submission of 14 September 2009. Despite the number of requests filed, the actual amendments made are not particularly complex.

Therefore, the board took all the auxiliary requests of appellant II into consideration.

Auxiliary requests - Allowability of the amendments

3. Each of the auxiliary requests 1, 3, 5, 7, 9, 11, 13 and 15 comprises an amended independent claim directed, in one of the claimed alternatives, to a "*niobium*

pentoxide powder characterized as ... (b) having a BET surface area of greater than $2\text{m}^2/\text{g}$ and a packed bulk density of less than 1 g/cc" (emphasis added). The claims concerned are

- in auxiliary request 1: claim 5;
- in auxiliary request 3: claim 5;
- in auxiliary request 5: claim 4;
- in auxiliary request 7: claim 4;
- in auxiliary request 9: claim 5;
- in auxiliary request 11: claim 5;
- in auxiliary request 13: claim 1; and
- in auxiliary request 15: claim 1.

3.1 In each of the aforementioned independent claims, the upper limit of the range for the packed bulk density value has been lowered from 1.8 (see alternative (b) according to claim 5 as granted and claim 5 of the application as originally filed) to 1.

3.2 Concerning the basis for this amendment, appellant II referred to page 13, second paragraph of the application as filed (published as WO 97/13724 A1), which reads:

"A second embodiment of valve metal pentoxide may be characterized as high surface area, low bulk density, calcined, niobium pentoxide particles having a BET surface area **greater than $2\text{ m}^2/\text{g}$** , preferably greater than $2.5\text{ m}^2/\text{g}$, more preferably greater than $3\text{ m}^2/\text{g}$, even more preferably greater than $4\text{ m}^2/\text{g}$, and in some cases yet even more preferably greater than $6\text{ m}^2/\text{g}$, and a packed bulk density of **less than 1.8 g/cc** , preferably **less than 1 g/cc** and in some cases more preferably less than 0.75 g/cc ."

- 3.3 However, the quoted paragraph does not expressly refer to Nb₂O₅ having both a BET surface area greater than 2 m²/g **and** a packed bulk density of less than 1.8 g/cm³. In other words, this paragraph does not refer to Nb₂O₅ having a BET surface area in the most general range specified in the application as filed, namely a BET surface area which may be (almost) **as low as 2** m²/g and, at the same time, a relatively low packed bulk density in the preferred range of less than 1 g/cm³.
- 3.4 It is noted that whereas Table 1 of the application as filed refers to a sample of Nb₂O₅ (No.3) that falls within the ranges according to alternative (a) of the claims in question, Table 1 contains no example of Nb₂O₅ meeting the double criterion defined in alternative (b) of said claims, i.e. which has both a packed density of less than 1 g/cm³ and a BET surface area greater than 2 m²/g.
- 3.5 On the other hand, Table 1 refers to two examples (Nos. 1 and 4) having surface areas (2.82 and 2.18 m²/g, respectively) relatively close to but greater than the value of 2 m²/g. However, the packed densities of these two samples (1.71 and 1.62 g/cm³, respectively) are substantially higher than the upper limit of 1 g/cm³ specified in alternative (b) of the amended claims.
- 3.6 Example 5 of the application as filed relates to Nb₂O₅ having a packed density of 1.02 g/cm³, and constitutes the only example of Nb₂O₅ actually having a packed density value close to (but nevertheless slightly outside and higher than) the claimed range of "less than 1 g/cc". However, the corresponding surface area of this Nb₂O₅ sample is not indicated in the table, and

- it cannot be derived from the application as filed, not even from the data presented in Table 1 or the passage quoted by appellant II, that this powder would implicitly have a BET surface area of more than 2 m²/g.
- 3.7 More generally speaking, a clear and precise, explicit or implicit correlation between these two properties can neither be inferred from the description passage invoked by appellant II, nor from the data displayed in Table 1 or any other part of the application as filed, in particular not for powders having BET surface area values close to but greater than 2 m²/g and a packed bulk density of less than 1 g/cm³.
- 3.8 Under these circumstances, the board concludes that nothing in the application as filed points towards a Nb₂O₅ powder with the specific combination of properties according to alternative (b) as now claimed. Such powders having a BET surface area which may be almost as low as 2 m²/g and, at the same time, a packed bulk density of less than 1 g/cm³ are thus not directly and unambiguously disclosed in the application as filed, neither implicitly nor explicitly.
- 3.9 The amended claims concerned, although restricted in scope, are thus directed to subject-matter generated by the amendment and extending beyond the content of the patent application as filed, contrary to the requirements of Article 123(2) EPC.
- 3.10 Therefore, auxiliary requests 1, 3, 5, 7, 9, 11, 13 and 15 must be rejected.

Auxiliary requests 2, 4, 6, 8, 10, 12, 14 - Novelty

4. Each of the sets of claims according to the auxiliary requests 2, 4, 6, 8, 10, 12 and 14 comprises an independent claim having the same wording, except for the numbering, as claim 6 as granted. The claims concerned are
 - in auxiliary request 2: claim 6;
 - in auxiliary request 4: claim 5;
 - in auxiliary request 6: claim 5;
 - in auxiliary request 8: claim 6;
 - in auxiliary request 10: claim 6;
 - in auxiliary request 12: claim 2; and
 - in auxiliary request 14: claim 2.
- 4.1 The subject-matter of claim 6 as granted lacks novelty for the reasons given under points 1 to 1.8 hereinabove.
- 4.2 The reasons for rejecting the main request apply mutatis mutandis to these auxiliary requests which each contain a claim with the same wording as claim 6 as granted.
- 4.3 Consequently, auxiliary requests 2, 4, 6, 8, 10, 12 and 14 must also be rejected.
5. Summarising, none of the requests of appellant II is allowable. The further objections raised against the process claims and other independent product claims according to the various requests of the appellant II, which were also discussed at the oral proceedings, have no bearing on the board's above conclusion and need not, therefore, be dealt with in the present decision.

Order

For these reasons it is decided that:

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

The Registrar

The Chairman

C. Vodz

G. Raths