

Internal distribution code:

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

D E C I S I O N
of 12 May 2005

Case Number: T 0139/01 - 3.3.9

Application Number: 92903433.8

Publication Number: 0567529

IPC: B32B 1/04

Language of the proceedings: EN

Title of invention:
Oxygen-absorbing label

Patentee:
Multisorb Technologies, Inc.

Opponent:
Mitsubishi Gas Chemical Company, Inc.

Headword:

-

Relevant legal provisions:

EPC Art. 123(2) and (3)
EPC Art. 56

Keyword:

"Added subject-matter: Extension of protection (no)"
"Inventive step: Main request (no), obviousness by combination
of closest prior art with two documents lying in different
technical fields"
"Inventive step: First auxiliary request (yes)"

Decisions cited:

-

Catchword:

-



Case Number: T 0139/01 - 3.3.9

D E C I S I O N
of the Technical Board of Appeal 3.3.9
of 12 May 2005

Appellant: Multisorb Technologies, Inc.
(Proprietor of the patent) 325 Harlem Road
Buffalo
NY 14224-1893 (US)

Representative: Hartley, Andrew Philip
Mathisen, Macara & Co
The Coach House
6-8 Swakeleys Road
Ickenham
Uxbridge UB10 8BZ (GB)

Respondent: Mitsubishi Gas Chemical Company, Inc.
(Opponent) 5-2, Marunouchi 2-chome
Chiyoda-ku
Tokyo (JP)

Representative: Weber-Bruls, Dorothée, Dr.
Forrester & Boehmert
Pettenkoferstrasse 20-22
D-80336 München (DE)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office announced on 7 November
2000 and posted 4 December 2000 revoking
European patent No. 0567529 pursuant to
Article 102(1) EPC.

Composition of the Board:

Chairman: P. Kitzmantel
Members: W. P. Ehrenreich
M.-B. Tardo-Dino

Summary of Facts and Submissions

I. Mention of the grant of European Patent No. 0 567 529 in respect of European patent application No. 92 903 433.8 in the name of Multisorb Technologies, Inc., filed on 6 December 1991 as International application under the PCT with No. PCT/US91/09007, and claiming two US priorities of 7 January 1991 and 23 August 1991, was announced on 10 September 1997. The patent, entitled "Oxygen-Absorbing Label" was granted with seventeen claims, Claims 1 and 17 reading as follows:

"1. An oxygen-absorbing label (11) comprising a base sheet (13), and a gas permeable cover sheet (15) secured to said base sheet to define a space which contains a mixture of particulate iron (20; 27; 30) and particulate electrolyte material (21; 29; 31) between said base sheet and said cover sheet, characterized in that said cover sheet (15) is adhesively secured to said base sheet (13) by a first adhesive layer (14) along a border area (17) which is outwardly of said space and which does not contain said mixture, and a second adhesive layer (12) is provided on said base sheet (13) on the opposite side thereof from said first adhesive layer (14) for adhesively securing said label (11) to a foreign body."

"17. A plurality of oxygen-absorbing labels as set forth in any of the preceding claims, including a web (10) on which said labels (11) are releasably secured by said second layers (12) of adhesive."

Claims 2 to 16 were, either directly or indirectly, dependent on Claim 1.

II. Two Notices of Opposition requesting revocation of the patent in its entirety on the grounds of Article 100(a) and (c) EPC were filed by:

MITSUBISHI GAS CHEMICAL COMPANY, INC. - Opponent I - on 25 November 1997 and
STANDA INDUSTRIE - Opponent II - on 15 June 1998.

The Opposition of Opponent II, which was filed after the expiry of the opposition period, ending on 10 June 1998, was deemed not to have been filed. Therefore, the opposition proceedings were terminated as regards Opponent II.

The Opponent I, MITSUBISHI GAS CHEMICAL COMPANY, INC, is therefore hereinafter referred to as "The Opponent".

With regard to Article 100(a) EPC the Opponent submitted that the subject-matter of the patent lacked an inventive step (Article 56 EPC) and based its submissions, inter alia, on the following JP-documents, provided as English translations:

E1: JP-A 55-116434
E4: JP-A 63-281964
E11: JP-A 2-71814
E14: JP-A 55-116435
E15: JP-U 2-10569
E19: JP-U 2-46625
E20: JP-U 1-177183.

The documents E19 and E20 were introduced after the expiry of the opposition period, with the letter dated 12 November 1999.

- III. The Patent Proprietor requested that the patent be maintained as granted, or alternatively on the basis of one of four auxiliary requests submitted during the opposition proceedings with the letter dated 5 October 2000.

In the oral proceedings before the Opposition Division held on 7 November 2000 the Proprietor withdrew its first auxiliary request with the consequential renumbering of the subsequent auxiliary requests enclosed as Appendices B, C and D to the decision of the Opposition Division.

Claim 1 of the first auxiliary request (Appendix B) was based on Claim 1 of the patent as granted with the additional qualification (underlined) that the mixture of particulate iron and particulate electrolyte material is in the form of a layer and that the space defined by the base sheet (13) and the cover sheet (15) also contains a sheet of moisture-absorbing paper.

Claim 1 of the second auxiliary request (Appendix C) was based on Claim 1 of the first auxiliary request with the further qualification that said layer and said sheet overlie each other and are in direct contact with each other, and either said layer or said sheet are immediately adjacent to said cover sheet.

Claim 1 of the third auxiliary request (Appendix D), which was directed to a plurality of oxygen-absorbing labels on a web, was based on Claim 17 in combination with Claim 1 of the patent as granted with the further modification that the label is adhesively secured to the web.

IV. In its decision orally announced on 7 November 2000 and issued in writing on 4 December 2000 the Opposition Division revoked the patent.

With respect to the issue of inventive step, the Opposition Division held that it could not see any reason why a person skilled in the art would not have combined the teachings of the documents E1, E11 and E19, which all relate to oxygen-absorbing sheets intended for use inside packages, in such a manner as to arrive at the oxygen-absorbent labels defined in Claim 1 of all requests.

With respect to Claim 1 of the third auxiliary request, the Opposition Division held that there was no reason either why a person skilled in the art would not have transferred the teaching of document E15 (i.e., to releasably adhere a plurality of labels to a web), to the oxygen-absorbing labels of the patent. In the Division's judgment the technical field of conventional labels of E15 without oxygen-absorbing properties and the specific technical field of oxygen-absorbing labels (according to E1, E11 and E19) were not so remote from each other that transfer of a technical teaching in one of those fields to the other was to be regarded as involving an inventive step.

The Opponent's submissions as to added subject-matter under the opposition ground according to Article 100(c) EPC and under Article 123(2) EPC were not discussed in the decision.

- V. On 31 January 2001 the Patent Proprietor (Appellant) lodged an appeal against the decision of the Opposition Division. The Statement of the Grounds of Appeal was submitted on 3 April 2001.

The Appellant maintained its main request, i.e. maintenance of the patent as granted, and submitted new auxiliary requests 1 to 3, which were based on the auxiliary requests 1 to 3 of the opposition proceedings, however in a changed order:

New auxiliary request 1, consisting of fourteen claims, was based on auxiliary request 3 of the decision under appeal;

New auxiliary request 2, consisting of nine claims, corresponded to auxiliary request 1 of the decision under appeal;

New auxiliary request 3, consisting of nine claims, corresponded to auxiliary request 2 of the decision under appeal.

- VI. In its submissions filed with letter of 10 October 2001, the Respondent (Opponent) raised objections under Article 100(c) EPC in respect of the main request and under Article 123(2) and (3) EPC in respect of the auxiliary requests 1 and 3, and submitted that the

subject-matter of all requests lacked an inventive step, under Article 100(a) EPC.

VII. In response to a communication of the Board, issued on 25 January 2005, the Appellant filed further submissions with a letter dated 11 April 2005, accompanied by a modified first auxiliary request replacing in Claim 1 the word "separated" by "spaced".

In its submissions filed with the letter dated 12 April 2005, the Respondent confirmed its position taken in the previous statement concerning added subject-matter and extended scope of protection (Article 123(2) and (3) EPC) as well as lack of inventive step (Article 56 EPC).

During the oral proceedings held on 12 May 2005 the Appellant abandoned the main request and made the previous first auxiliary request the new main request. After a discussion of the issues under Article 123(2) EPC, the Appellant filed an amended Claim 1 of the new main request in which the feature "in the form of a layer" had been deleted.

The Appellant also filed a new first auxiliary request based on the previous second auxiliary request but with the deletion of Claims 7 and 8.

The former third auxiliary request became the new second auxiliary request.

Claim 1 of the operative main request, consisting of fourteen claims, reads as follows:

"1. A plurality of oxygen absorbing labels (11) on a web (10) to which each of said labels is releasably secured spaced from each other, each label (11) comprising a base sheet (13), and a gas permeable cover sheet (15) secured to said base sheet to define a space therebetween which contains a mixture of particulate iron (20) and particulate electrolyte material (21) and which also contains particulate moisture-sensitive material, said base sheet being provided with a first adhesive layer (14) on one side thereof by which said cover sheet (15) is adhesively secured to said base sheet (13) along a border area (17) which is outwardly of said space and which does not contain said mixture, and said base sheet being provided with a second adhesive layer (12) on the opposite side thereof from said first adhesive layer (14) for releasably adhesively securing the label to said web and for adhesively securing the label to a foreign body when the label is released from the web."

Claim 1 of the first auxiliary request, consisting of seven claims, reads as follows:

"1. An oxygen-absorbing label (11) comprising a base sheet (13), and a gas permeable cover sheet (15) secured to said base sheet to define a space which contains a mixture of particulate iron (20) and particulate electrolyte material (21) in the form of a layer between said base sheet and said cover sheet, characterized in that said space also contains a sheet of moisture-absorbing paper, and said cover sheet (15) is adhesively secured to said base sheet (13) by a first adhesive layer (14) along a border area (17) which is outwardly of said space and which does not

contain said mixture, and a second adhesive layer (12) is provided on said base sheet (13) on the opposite side thereof from said first adhesive layer (14) for adhesively securing said label (11) to a foreign body."

VIII. The Respondent's arguments submitted in writing and at the oral proceedings may be summarized as follows:

(a) *Article 123(2) and (3) EPC - Main Request and First Auxiliary request*

(a1) Main Request

A number of the features of Claim 1, taken from the figures of the originally filed application (WO-A 92/12004), hereinafter "WO publication" and not from its claims, had been combined in a quite arbitrary manner, contrary to the requirements of Article 123(2) EPC.

Inter alia, this objection concerned the feature whereby each of said labels is releasably secured spaced from each other, because in Claims 46 and 47 of the WO publication - in agreement with figures 8 and 9 - the features whereby the individual labels were connected by a connecting means to form a web consisting of a plurality of labels, and that the connecting means comprised the edge portion of adjacent labels, de facto excluded a space between the individual labels.

Similarly, the feature of Claim 1 that the moisture-sensitive material is particulate in general could not be derived from the WO

publication. Claim 11 of the WO publication disclosed a particulate moisture-sensitive material, which, however, was embedded in a polymer sheet together with particulate iron and particulate electrolyte material. The same applied to the particulate moisture-sensitive material of Claim 44 because this Claim referred back to Claim 43, which itself referred back to Claim 37, the latter requiring that the particulate oxygen-absorbing material was in the form of a layer.

Moreover, the amendments not only violated the requirements of Article 123(2) EPC but also constituted a broadening of the scope of protection, contrary to Article 123(3) EPC.

(a2) First Auxiliary Request

According to Claims 8 and 23 of the WO publication a sheet of moisture-absorbing paper was disclosed without, however, the indication that the particulate iron and the particulate electrolyte material existed in the form of a layer.

Furthermore, all that could be derived from the passage at page 6, line 15 to page 8, line 28 of the WO publication, explaining the figures 2 and 3, was that a blotter paper or a desiccant paper - i.e. a more specific moisture-absorbing paper - was combined with particulate iron and particulate electrolyte in the form of a layer. Thus, the feature of Claim 1 concerning the presence of particulate iron and particulate electrolyte in the form of a layer in combination with a sheet of a moisture-absorbing paper in general introduced

added subject-matter contrary to Article 123(2) EPC.

Moreover, the above combination of features in Claim 1 of the main request led to a broadening of the scope of protection because Claim 10 as granted required that the sheet of moisture-absorbing paper was positioned between the cover sheet (15) and the particulate iron (20) and the particulate electrolyte (21), which arrangement was only optional according to Claim 1. Thus, the main request did not meet the requirements of Article 123(3) EPC.

(b) Inventive step (Article 56 EPC) - Main Request and First Auxiliary Request

(b1) Main Request

Document E1 showed in figure 7 a deoxidizing sheet with an iron powder-based deoxidizer within a space, comprising the same elements, in particular, a double-sided adhesive tape securing a surface cover sheet and forming the space, as in example 3 of the patent specification.

Figure 3 of document E11 disclosed a sheet deoxidizer comprising a gas-permeable upper sheet, heat-sealed to a base sheet, a deoxidizer based on iron powder filling the space between the upper sheet and the base sheet, and a sticky substance covered by a release paper which can be peeled off for fixing the sheet deoxidizer to the inside of a container.

Thus, E1 or E11 represented the closest prior art, from which the claimed subject-matter differed in the composition of the oxygen-absorbing agent and in the arrangement of a plurality of labels on a web.

In the light of E1 or E11 as the closest prior art, the skilled person had to solve two completely unrelated problems lying in different technical fields, namely

- the provision of an effective deoxidizing composition based on iron powder (cf. original application: page 1, lines 17 to 22; patent specification: page 2, lines 15 to 17) and
- to find an arrangement of labels facilitating labelling using conventional label-applying machinery (cf. original application: page 2, lines 3 to 8; patent specification: page 2, lines 23/24).

The solution to the first problem according to Claim 1, however, was obvious from E4, which describes an oxygen-absorbing composition based on particulate iron, particulate sodium chloride (electrolyte) and hygroscopic (moisture-sensitive) inorganic filler.

The solution to the second problem was obvious from E15, which discloses a plurality of labels spaced from each other and releasably secured by

an adhesive layer on the surface of a detachable paper (web), which arrangement allowed the application of the labels to products (e.g. by a labelling machine).

These two measures taken to solve the two aforementioned problems were completely independent from one another.

Thus, a skilled person would arrive at the claimed subject-matter without an inventive effort by combining E1 or E11 with E4 and E15.

(b2) First Auxiliary Request

The lamination of a moisture impregnated paper with a thermoplastic layer including iron powder and electrolyte (sodium chloride) for oxygen-absorbing purposes, was described in E19, which document also considered the presence of water to be indispensable for ionizing the electrolyte and initiating the reaction of the iron powder with oxygen (page 3, first paragraph). According to E19, page 4, first full paragraph, a moisture-absorbing kraft paper was used which was then impregnated with water. Because Claim 1 of the main request did not exclude the treatment of the moisture-absorbing paper with water in advance, no distinction could be made between the moisture impregnated paper in E19 and the moisture absorbing paper according to Claim 1. All the more so as moisture absorbing and moisture supplying materials were considered equivalent at page 5, lines 1 to 5, of the patent specification (page 10,

lines 5 to 13 of the original application) and, as mentioned at page 8, last line, to page 9, line 4, of the specification (page 20, lines 14 to 23 of the original application), the moisture-absorbing blotter paper in the sense of the invention could carry a certain amount of its own weight of moisture.

Moreover, E20 disclosed a laminate with oxygen absorbing activity comprising a layer of an oxygen-absorbing sheet made of a mixture of iron powder and salt (electrolyte) and a moisture attracting layer made of a calcium chloride-impregnated paper (Claim).

Thus, it was obvious for a skilled person to modify the oxygen-absorbing composition of E1 or E11 in the sense of either E19 or E20 and to arrive at the subject-matter of the first auxiliary request.

IX. The written and oral arguments of the Appellant may be summarized as follows:

(a) Article 123(2) and (3) - Main Request and First Auxiliary Request

(a1) Main Request

From figure 1 of the WO publication, showing a plurality of labels on a web spaced from each other, it was immediately evident that the relevant feature in Claim 1 was originally

disclosed. A space between the labels was also derivable from Claim 48 of the WO publication.

Original Claim 4, taken in context with figure 7 and the text passages at page 10, lines 13 to 15, page 13, lines 19 to 27, and page 14, lines 8 to 10, implied that all components of the oxygen-absorbing composition (i.e. the iron powder, the electrolyte and the moisture sensitive material) could be particulate without further limitations as to the nature of the moisture sensitive material or the shape of the composition.

Furthermore, the amendments in Claim 1 did not broaden the scope of protection contrary to Article 123(3) EPC because Claim 17 as granted, on which the main request was based, referred back to granted Claim 1, which was the broadest claim and embraced all features of the main request.

(a2) First Auxiliary Request

At page 7, lines 25/26, of the WO publication a clear disclosure was to be found that the function of the blotter or desiccant paper was to "attract moisture". Therefore, the terms "blotter/desiccant paper" and "moisture absorbing paper" could be considered equivalent. Consequently, the combination in Claim 1 of the particulate iron and the particulate electrolyte in the form of a layer with a moisture-absorbing paper constituted neither added subject-matter nor a broadening of the scope of protection.

(b) *Inventive step (Article 56 EPC) - Main Request and First Auxiliary Request*

(b1) Main Request

Neither of the documents E1 or E11 related to an oxygen-absorbing device in the form of a label. A label was flat and thin, whereas figure 3 of E11, for instance, showed a device with a bulge in the middle. Moreover, the figures in E11 did not depict a plurality of labels spaced from each other.

The construction of the oxygen-absorbing sheet described in E1 did not correspond to the construction claimed. It followed from figure 6 of E1 taken in context with the explanation of the reference signs (7), (11) and (12), that the base layer (11) could not be separated from the adhesive layer (12) because the sheet would lose its stability. That the base layer and the surface layer were not separable was also evident from the first paragraph at page 3 of E1. Therefore, E1 did not describe a label which was releasably secured to a web.

The skilled person would also not combine E1 or E11 with E15 because E15 pertained to a plurality of standard labels - i.e. labels without any oxygen absorbing activity - on a web. The teaching in Claim 1 to provide the deoxidizing devices of the prior art in the form of labels releasably secured on a web and spaced from each other was therefore not obvious.

(b2) First Auxiliary Request

The skilled person would not combine E1 or E11 with E19 because in E19 a water supplying paper, impregnated with water in advance, was used, whereas the teaching of Claim 1 proposed the use of a moisture absorbing paper, which had the function of attracting moisture in order to enable the deoxidizer to absorb oxygen very quickly. Such quick oxygen-absorption, however, was not possible with a water-supplying paper according to E19.

Therefore, a moisture absorbing paper and a moisture dispensing paper were not equivalent. The disclosure on page 8, last line, to page 9, line 4, of the patent specification that a moisture absorbing paper could be moist did not change the situation because this passage only stated that a paper which was not 100% dry attracted additional moisture.

The sheet according to E20 unified three different functions, namely the oxygen-absorbing function, the moisture-absorbing function and the deodorizing function (page 4, last full paragraph) which were, however, independent from each other. Concerning the function of the moisture absorbing paper, the only teaching that could be derived from E20 was to absorb moisture from the environment in a bag or container, but not for the purpose of activating the reaction of iron with oxygen in the oxygen-absorbing layer of the sheet.

Thus, there was no motivation for a skilled person to combine E1 or E11 with E20 in order to arrive at the subject-matter claimed.

X. The Appellant requested that the decision under appeal be set aside and the patent be maintained on the basis of the main request (Claim 1, submitted during the oral proceedings and Claims 2 to 14 filed with the letter dated 11 April 2005) or alternatively on the basis of the first auxiliary request (Claims 1 to 7 submitted during the oral proceedings) or on the basis of the second auxiliary request (corresponding to the former third auxiliary request filed with the Statement of the Grounds of Appeal).

XI. The Respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The Appeal is admissible.
2. The deletion of the feature "in the form of a layer" from Claim 1 of the main request during the oral proceedings on 12 May 2005 is admissible. The Board has no objection to this minor amendment, which was made as a result of normal defence against the Respondent's objections under Article 123(2) EPC raised in the oral proceedings.
3. Novelty was never under dispute in the course of the opposition and the appeal proceedings.

4. *Article 123(2) and (3) EPC - Main Request and First Auxiliary Request*

4.1 Main Request

The feature in Claim 1 "that the labels are spaced from each other" can be deduced from figure 1 of the WO publication. This figure clearly depicts a web (10) with a number of labels on the web wherein a space can be seen between the peripheral edges (17) of each single layer. On page 3, lines 2 to 4 of the description, it is explained that "FIG. 1 is a fragmentary plan view of a web containing a plurality of oxygen-absorbing labels of the present invention". Thus, it is evident that the labels in all embodiments depicted in figures 2 to 7 can be spaced from each other when a plurality of such labels is arranged on a web. The above feature of Claim 1 is therefore originally disclosed and its introduction into the claim does not contravene Article 123(2) EPC.

In the Board's judgement, the feature "particulate moisture-sensitive material" in admixture with particulate iron and particulate electrolyte can also be derived from the application as originally filed, in particular from the text passages of the WO publication at page 13, lines 22 to 27 and page 14, lines 8 to 10, explaining the embodiment depicted in figure 7 in conjunction with page 4, lines 10 to 29.

In the passage at page 13 it is explained that "... all materials are granular or particulate and that they include ... a moisture carrier such as hydrogel ...". The passage at page 14 states that "instead of using a

granular moisture carrier ... a moisture absorber such as silica gel ... can be used". These two passages clearly imply that both the moisture carrier (exemplified by a hydrogel) and the moisture absorber (exemplified by a silica gel) can be granular or particulate.

According to the above statement on page 4, which is not restricted to any specifically illustrated embodiment, these types of material are qualified as "moisture-sensitive materials" (lines 22 to 24).

Thus, a link between "granular" and "moisture-sensitive", which provides a basis for their combination in the context of the subject-matter of Claim 1, is clearly derivable from the WO publication.

In order to assess if an amended claim of the European patent extends the protection conferred contrary to Article 123(3) EPC, it is necessary to consider if the claims of the patent as granted embrace the subject-matter defined in the amended claim.

This is the case for Claim 1 of the main request. The subject-matter of Claims 17 and 1 as granted in combination comprises the now-claimed spaced arrangement of the labels on a web as well as the feature that all components of the oxygen absorber, the moisture sensitive material included, are particulate in the sense of figure 7.

Thus, the Board cannot see any violation of Article 123(3) EPC.

4.2 First Auxiliary Request

The combination of particulate iron, particulate electrolyte in the form of a layer and an absorbent sheet of blotter paper or desiccant paper is disclosed in the WO publication at pages 7 and 8, explaining the figures 2 and 3. In the Board's judgment, the term "absorbent sheet (22)" at page 7, line 20, together with the explanation that "the function of the blotter paper or desiccant paper is to attract moisture ... " at lines 25 to 27 of page 7, implies the moisture absorbing function of the paper. That the terms "desiccant" and "moisture absorbing" are considered equivalent in the application as originally filed, is in the Board's view also confirmed by the half-sentence in line 23 of page 7 "a desiccant paper which contains silica gel ..." in context with the text passage at page 4, lines 14/15, "the labels of the present invention can contain a moisture absorbent such as silica gel ..." (emphasis in the quotations by the Board).

Thus, the first auxiliary request meets the requirements of Article 123(2) EPC and, for reasons analogous to those set out in point 4.1 above, also of Article 123(3) EPC.

5. *Inventive step (Article 56 EPC) - Main Request and First Auxiliary Request*

5.1 The subject-matter of the patent in suit

The patent in suit concerns a device in the form of a multilayer label with an effective oxygen absorbing

activity for preventing products like food or pharmaceuticals from oxidation.

Important elements of the label are:

- (a) the closed space confined by the base sheet (13) and the gas permeable cover sheet (15), which sheets are adhesively secured to one another;
- (b) the oxygen absorbing composition based on particulate iron, particulate electrolyte and moisture sensitive material contained within the space;
- (c) the adhesive layer on the opposite side of the base sheet for adhesively securing the label to a foreign body (e.g. the inside of a package or container).

In addition to the above elements, the labels according to the main request are qualified by the arrangement on a web, to which they are releasably adhesively secured; and according to the first auxiliary request the oxygen-absorbing composition of the labels is specified by the layer-form of the particulate iron and the particulate electrolyte and the paper-form of the moisture sensitive material, which paper possesses moisture absorbing capacity.

5.2 The closest prior art

In the Board's opinion, E11 is the closest prior art because it lies in the same technical field as the patent in suit and has the most features in common with

the invention. This document describes in figure 3 an oxygen-absorbing device comprising:

- (a) a substrate (2), which serves as a base layer defining a sealed space together with a gas-permeable film (3), from which a gas impermeable top layer (2) has been peeled off when the oxygen absorber is in practical use (cf. figure 3, taken in context with the respective explanations of the reference signs at page 9; page 5, last four lines of the first paragraph, and the practical example 1);
- (b) an oxygen-absorber (1), based on an iron powder, filling the space (figure 3, reference sign 1, and page 8, lines 1 to 3 of the first paragraph) and
- (c) a sticky substance (4) covered by a release paper (5) on the underside of the substrate (2) so that the oxygen absorber may be affixed to the inside of a container or packaging container (figure 3, reference sign 4, in conjunction with page 4, 2 lines from the bottom, to page 5, line 4).

The Board considers that the device depicted in figure 3 of E11 possesses a label structure in the sense of the patent, all the more so as the patent fails to define in the claims any dimensions of the labels which could serve as a distinguishing feature vis-à-vis the prior art. The Appellant's argument, that the device of E11 has a bulge in the middle, whereas the labels according the invention are thin and flat, is not convincing in the light of the broad range of label-thickness (0.114 to 2.096 mm) given in Claim 4 of

the main and first auxiliary request, which must be assumed to overlap with that which can be expected for the articles of E11 whose oxygen scavenger material may be from 0.1 to 3 mm thick (page 7 lines 8 to 12).

5.3 Inventive step - Main Request

5.3.1 Problem and solution

The subject-matter of the main request differs from the afore-mentioned article essentially in that

- (i) the oxygen-absorber contains particulate electrolyte and particulate moisture sensitive material in addition to iron and

- (ii) a plurality of labels are secured on a web with a space between them.

The Board agrees with the argument of the Respondent expressed in the oral proceedings that two separate problems lying in different technical fields, rather than a single problem, are solved by the distinguishing features (i) and (ii).

Problem (i) is a **chemical problem** and consists of the provision of an effective oxygen absorbing composition based on iron powder.

Problem (ii) is a **problem of label-arrangement** and consists of facilitating the handling of encased oxygen absorbing material and its fixation to the appropriate package position (cf. patent specification, page 2, lines 23 and 24).

A skilled person seeking to solve these two problems would therefore consider prior art both in the field of oxygen-absorption inside packages and in the area of package labelling, because the possibility of adhesively fixing the small oxygen absorbing articles of E11 to a container/package would appear to be closely related to the attachment of labels for the purpose of conveying information.

5.3.2 Obviousness

The solution to problem (i) is obvious from document E4, indicating at paragraph 2 of page 4 that the oxygen-absorbing capability of iron powder is fully achieved when three elements: iron powder, sodium chloride (serving as an electrolyte) and water are present, and proposing to combine iron powder with particulate sodium chloride and a hydrophilic filler (page 1, Claim).

In view of the conclusions drawn in the previous subsection, the solution to problem (ii) is obvious from document E15, where the arrangement of a plurality of product labels spaced from each other and adhesively secured to a detachable paper (web) and their application to products are disclosed (cf. figures 1 to 4 in conjunction with page 1, points 2 and 3, as well as the paragraph bridging pages 4 and 5). The fact that E15 does not describe labels with oxygen-absorbing properties is not decisive because the teaching of E15 concerning the releasably adhesive arrangement of labels on a web is independent of a specific function of the labels.

5.3.3 Conclusion

From the above it follows that the combination of E11 with E4 on the one hand and the combination of E11 with E15 on the other leads the skilled man to the subject-matter of Claim 1 of the main request. Obviousness of the claimed subject-matter is here not the result of a threefold combination of document E11 with documents E4 and E15 but of an aggregation of the solution of two problems lying in distinct technical fields, which the skilled person would consider both.

Therefore, the subject-matter of Claim 1 does not meet the requirements of Article 56 EPC and the main request as a whole is refused.

5.4 Inventive Step - First Auxiliary Request

5.4.1 Problem and solution

The subject-matter of the first auxiliary request differs from the deoxidizer article in E11 essentially in that the oxygen-absorber is arranged in the form of two layers, one layer including the particulate iron in combination with particulate electrolyte and the other layer constituting a moisture-absorbing paper. According to the patent specification at page 3, lines 8 to 10 taken in context with page 4, lines 1 to 15, this arrangement is used in a high-moisture environment and solves the problem of attracting moisture from the environment through the gas permeable sheet via the moisture-absorbing paper in order to

activate the electrolyte and subsequently the oxygen-scavenging activity of the particulate iron.

5.4.2 Obviousness

Document E19 pertains to an oxygen-absorber in the form of a sheet, wherein a layer of particulate iron and salt, embedded in a thermoplastic resin, is laminated with a water-impregnated paper or wet-type non woven fabric (page 1, Claims and page 2 penultimate paragraph). It is pointed out in the last paragraph of page 2 that "*[t]he minimum amount of the absorbed water must be such that enough water is released from the paper ... and transferred to the oxygen absorbing sheet (A) for accelerating oxidation reaction*".

In other words, the purpose of the paper according to E19 is to release water to the environment and to transfer it to the oxygen-absorbing sheet. This is the opposite purpose to that of the moisture-absorbing paper of the invention, which is aimed at attracting moisture from the environment. Insofar as the Respondent points to page 8, last line, to page 9, line 4, of the patent specification, indicating that a moisture absorbing blotter paper can carry certain amounts of moisture already, the Board concludes that this fact does not exclude the ability of the blotter paper to attract moisture in addition to its original moisture content.

Although the activating effect provided by a moisture supplying paper and a moisture attracting paper is caused by the same chemical reaction, namely the dissolution and ionisation of the electrolyte in water,

thereby initiating the reductive capacity of metallic iron, an important distinction has to be made between the use of an oxygen scavenger in a dry atmosphere, requiring a moisture supplying paper as in E19, and its use in a humid atmosphere allowing a moisture attracting paper according to the teaching of the subject-matter of the first auxiliary request.

Hence, E19 does not suggest the replacement of the particulate oxygen-scavenging material of E11 by a layered construction in accordance with E19, comprising a paper which, however, possesses moisture absorbing properties.

Thus, the subject-matter of the main request is not rendered obvious by a combination of E11 with E19.

The three-layer sheet according to E20 combines three different properties:

- the oxygen absorbing property provided by a layer made of a mixture of iron powder and salt (electrolyte);
- the moisture-absorbing property provided by a paper impregnated with calcium chloride;
- the deodorizing property provided by a layer made of a mixture of activated carbon or zeolite in a thermoplastic resin or paper

(cf. page 1, points 2 and 3).

However, there is no indication in E20 that the layers are combined in such a way that the property of one layer can influence or enhance the effect of the other. For instance, the layers can be bonded and thus separated by an adhesive (page 3 lines 1 to 3), which would prevent them from chemical interaction. Thus, the skilled person could not deduce from this document that the moisture-absorbing paper can be used in the sense of the invention, i.e. for attracting moisture and supplying it to the oxygen-absorbing layer in order to activate its oxygen-scavenging capacity. Hence, E20 does not provide an incentive to the skilled person to replace the iron powder based oxygen scavenger of E11 with a system of two interacting layers consisting of particulate iron and electrolyte, having the purpose of activating the oxygen absorbing layer by moisture intake via the moisture-attracting paper.

Thus, the combination of E11 with E20 does not lead the skilled person to the subject-matter of Claim 1 of the first auxiliary request either.

5.4.3 Conclusion

Since the combination of the closest prior art according to E11 with the information in the only other relevant documents, E19 or E20, does not render the label of Claim 1 obvious, and since the further Claims 2 to 7 of the first auxiliary request are dependent thereon either directly or indirectly, the entire subject-matter claimed by this request involves an inventive step over the cited prior art.

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 on the basis of Claims 1 to 7 of the first auxiliary request filed during the oral proceedings, after any necessary consequential amendment of the description and the drawings.

The Registrar:

The Chairman:

G. Röhn

P. Kitzmantel