**Internal distribution code:**

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

# Datasheet for the decision of 28 April 2021

**Case Number:** T 1861/16 - 3.2.05

**Application Number:** 06816730.3

**Publication Number:** 1949351

**IPC:** G09F3/02, B29C65/00, B29C65/36, B29D23/20

**Language of the proceedings:** EN

**Title of invention:**
Method of producing a squeeze tube with maximally labeled surface area

**Patent Proprietor:**
Tubedec LLC

**Opponents:**
X-label GmbH
Huhtamaki Flexible Packaging Germany GmbH & Co. KG

**Relevant legal provisions:**
EPC 1973 Art. 54(1), 56, 100(a), 100(b), 113(1)
EPC 1973 R. 27(1)(e)
RPBA 2020 Art. 13(2)

**Keyword:**
Sufficiency of disclosure (yes)
Novelty (yes)
Inventive step (yes)

**Decisions cited:**
R 0009/14, T 1019/99, T 1014/07

Europäisches Patentamt
European Patent Office
Office européen des brevets

**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

**Case Number: T 1861/16 - 3.2.05**

# D E C I S I O N
# of Technical Board of Appeal 3.2.05
# of 28 April 2021

| | |
|---|---|
| **Appellant:** (Opponent 1) | X-label GmbH<br>Schulstrasse 14<br>42653 Solingen (DE) |
| **Representative:** | Bird & Bird LLP<br>Am Sandtorkai 50<br>20457 Hamburg (DE) |
| **Respondent:** (Patent Proprietor) | Tubedec LLC<br>11000 Midlantic Drive<br>Mount Laurel, NJ 08054 (US) |
| **Representative:** | Eisenführ Speiser<br>Patentanwälte Rechtsanwälte PartGmbB<br>Postfach 31 02 60<br>80102 München (DE) |
| **Party as of right:** (Opponent 2) | Huhtamaki Flexible Packaging Germany GmbH & Co. KG<br>Nicolaus-Heinrich-Str. 6<br>87671 Ronsberg (DE) |
| **Representative:** | Ruttensperger Lachnit Trossin Gomoll<br>Patent- und Rechtsanwälte<br>PartG mbB<br>Postfach 20 16 55<br>80016 München (DE) |
| **Decision under appeal:** | **Decision of the Opposition Division of the European Patent Office posted on 28 June 2016 rejecting the opposition filed against European patent No. 1949351 pursuant to Article 101(2) EPC.** |

**Composition of the Board:**

| | |
|---|---|
| **Chairman** | P. Lanz |
| **Members:** | B. Spitzer |
| | C. Brandt |

## Summary of Facts and Submissions

I. The appeal by opponent 1 is against the decision of the opposition division posted on 28 June 2016 to reject the opposition against the European patent No. 1 949 351.

II. During the opposition proceedings, the opponents had raised the grounds for opposition under Article 100(a) EPC in combination with Article 54 or 56 EPC (lack of novelty and lack of inventive step), 100(b) and 100(c) EPC.

III. Oral proceedings were held before the board of appeal on 28 April 2021.

IV. *Requests*

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

The respondent (patent proprietor) requested that the appeal be dismissed (main request) or, as an auxiliary measure, that the decision under appeal be set aside and that the patent be maintained on the basis of one of auxiliary requests 1 to 4 filed with the reply to the appeal dated 10 March 2017.

V. The documents cited during the appeal proceedings include the following:

D5: DE 34 01 959 A1
D12: WO 2005/085081 A1
D14: FR 2 741 043 A1

P1: FASSON® Tube Labeling Product Guide, FASSON Role North America (Painesville, Ohio), © 2004 Avery Dennison Corporation, ADV# 160/0661, 9/04, 2500

D17: Beauty Packaging Magazine, issue November/ December 2003, pages 4 to 8

D18: Beauty Packaging Magazine, issue January/ February 2004, pages 1 to 4

D23: NORDENMATIC 700, brochure, Norden Pac International AB

VI. Claim 1 of the granted patent (main request) has the following wording (feature designations added by the board in square brackets):

"[F1] A method for producing a plastic squeeze tube with maximal surface area labeling
[F2.1] comprising sealing through a plastic or laminate film tube
[F2.2] and a label adhered thereto,
[F3] wherein the label encompasses at least a portion of the sealed area of the squeeze tube,
[F4] thereby producing a squeeze tube with maximal surface area labelling,
[F5] characterized in that the internal surface of the tube is heated before sealing pressure is applied."

VII. The appellant's arguments can be summarised as follows.

*Violation of its right to be heard*

The appellant asserted a violation of its right to be heard by the opposition division. During the opposition proceedings, the respondent had alleged a technical prejudice based on document P1, which had been late filed with the letter dated 28 April 2016, and document

D12, which had been discussed for the first time in this letter. Confronted with these submissions at such a late stage of the opposition proceedings, the appellant was deprived of a chance to file further relevant documents to prove the contrary.

*Insufficiency of disclosure*

The invention was insufficiently disclosed because:

- contrary to Rule 42(1) EPC, the patent in suit did not contain any embodiments
- the term "label" according to paragraph [0011] of the patent in suit should be used in a very broad sense and was not clearly distinguished from laminated/multilayer films
- the maximal surface area labelling, i.e. the portion of the sealed area covered by the label, was not defined. In view of the values indicated in paragraph [0011], column 3, lines 55 to 58, of the patent in suit, it could even be in the per thousand range

It was emphasised that according to established case law (see T 60/89, T 373/94), the same level of skill had to be applied when considering sufficiency of disclosure and inventive step.

*Main request - lack of novelty*

The subject-matter of claim 1 was not new over document D5.

Document D5 was concerned with a device for sealing hollow bodies, especially plastic or laminated tubes or pipes (see document D5, page 4 (being the first page of the description), first paragraph). Since laminated

tubes according to paragraph [0011] of the patent in suit fell under the scope of claim 1, the features of the preamble of claim 1 were disclosed in document D5. A device for hot gas welding was shown in Figure 1 of document D5. The corresponding passage on page 7 disclosed the hot air being conducted from the outlet of nozzle 10 obliquely upward to a well-defined area at the end of the tube. Page 9, third paragraph, of document D5 mentioned that nozzle 10 co-operated with press jaws 22. The jaws provided the necessary sealing pressure. Consequently, the characterising feature was disclosed as well.

The opposition division (see point 17.1.9 of the decision under appeal) was wrong in concluding that document D5 was not concerned with the sealing of a labelled tube. Rather, a laminate layer disposed on a tube could be considered a label. Moreover, document D5 solved the same problem as the patent in suit, namely that the label was exposed to minimal heat during sealing (see patent in suit, paragraph [0013], column 4, lines 26 to 27). The gist of the disclosure of document D5 was to heat only the areas to be later sealed under pressure. Heat impact on the outer surface should be prevented. The use of a loop with a cooling medium in document D5 contributed to a well-defined sealing area and, in addition, was not excluded in the patent in suit.

*Main request - lack of inventive step*

In case the disclosure in the patent in suit was considered sufficient, the subject-matter of claim 1 was without inventive merits. The skilled person would have arrived at the claimed subject-matter on the basis of the teachings of document D14 alone or in

combination with document D5.

Document D14 was considered the closest prior art. The subject-matter of claim 1 differed from document D14 in feature [F5] according to which "*the internal surface of the tube is heated before sealing pressure is applied*".

In document D14, the end of the tube was closed by sealing (see document D14, page 2, lines 4 to 6 and line 28, to page 3, line 2, and claim 8). It disclosed welding but not the heating step, i.e. it was not described whether the heating was done before or after the ends were pressed together. This means that the sequence of the method steps of heating and pressing was left open. The fact that the end was first flattened and then sealed did not exclude the possibility that first the inner surface was heated and then pressure was applied. To weld the rear end of the tube, heating of the internal tube surface either from the inside or the outside and its plasticisation was inevitable as otherwise the tube could not be welded. Claim 1 of the patent in suit just claimed that it was heated before sealing pressure was applied.

For the person skilled in the art, it was implicitly clear from document D14 itself that heating was not done from the outside. First, as the rear end comprised a label, heating of the outer surface would destroy the label. Second, the label could comprise a barrier layer (see document D14, page 4, line 35), which was usually a metal or a multilayer label (see document D14, page 5, line 1 to 2). These layers would prevent the penetration of heat. Thus, the skilled person would not have considered heating from the outside. Third, a self-adhesive label was used in document D14 (see page

3, lines 24 to 25). In order not to damage the adhesive, heat would be applied from the inner side. Furthermore, hot air welding was already used in document D14 for the head of the tube (see document D14, page 6, lines 13 to 17). Thus, it would have been obvious to also apply hot air welding to the other end of the tube.

Even if the skilled person had not arrived at the claimed solution by the teachings of document D14 alone, they would have found the solution in document D5.

The effect of feature [F5] of claim 1 was established in paragraph [0013] of the patent: the label should be exposed to minimal heat during the sealing. Accordingly, the technical effect was the reduction of heat impact. Paragraph [0008] of the patent in suit ("... a label adhered to a tube or tube film does not dart or flag and does not delaminate from the tube") was not related to feature [F5] but feature [F3], which related to extending the label into the sealed area of the squeeze tube. Hence, delamination was not part of the problem as it was already solved by feature [F3]. The delamination due to heat was addressed in the patent in suit in paragraphs [0002] and [0003] ("*the label coating or ink may loose adhesion to the tube and separate due to heat*" and "*the label on this tube delaminates in the sealed area*").

The patent in suit itself stated that the problem of delamination was solved by using a suitable label and a suitable method for adhering the label to the tube. The reduced heat impact on the outer surface of the sealing area helped but did not ensure a non-damaged label in the sealing area (see paragraph [0002] of the patent in

suit: "*In most cases, the tube is not labeled or decorated in the seal area because damage to the label, ink, or surface coating can occur during sealing*"). Paragraph [0014] of the patent in suit offered a solution to the problem of delamination, i.e. the label had to have sufficient label peel strength adhesion values.

Accordingly, the objective technical problem solved by feature [F5] was to provide a method for sealing a tube where the heat impact on the outer surface of the tube was minimised.

The skilled person would have used the hot air welding process of document D5 because it solved the problem of reduced heat impact. Document D5 disclosed on page 7 that the hot air was allowed to flow over a defined area of the end of a transverse tube sealing ("die Heißluft über einen definierten Bereich des Endes einer in Querrichtung abdichtenden bzw. zu verschließenden Tube streichen zu lassen"). On page 8, it was further disclosed that the area inside the end of the tube body to be heat welded affected by the air flow was precisely defined: it was determined by the slot and the depth of insertion into the tube ("Der Angriffsbereich der Luftströmung im Inneren des Endes des Tubenkörpers 14, das heißverschweißt werden soll, wird durch den Schlitz 12 und die Einsetztiefe in die Tube hineinbestimmt. Dem auf diese Weise genau definierten Angriffsbereich folgt..."). By heating this precisely defined area of the inner surface of the end of the tube, the heat impact on the outer surface of the tube was minimised. In document D5, the inner surface was heated and, in addition, there were further means for preventing the outer region from being heated. It did not matter that document D5 did not

explicitly mention labels because the objective technical problem was the reduction of heat impact and not delamination.

Apart from this, the selection of heating the inner surface before applying pressure was a purposive selection which did not involve an inventive activity. With reference to the Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, I.D. 9.19.4, the four criteria for purposive selection were fulfilled. The method of hot air welding was known (see document D5), available on the market (see document D23) and suitable for the tube of document D14, and it was highly likely that the person skilled in the art would have applied this step.

Regarding the alleged technical prejudice, document D14 itself proved that there was no technical prejudice. Document P1 explicitly mentioned a labelled tube with a label extending into the crimped/sealed area (see the table on page 7). Document D12 concerned a completely different technology, namely in-mould labelling, and did not demonstrate a technical prejudice either.

*Admittance of a new inventive step attack (document D14 in combination with document D23)*

The appellant requested that the board admit a new inventive step objection based on documents D14 and D23. Document D23 clearly mentioned the technical effect of a reduced heat impact and proved that the method of document D5 was well-established. This new objections constituted a reaction to the board's surprising conclusion that a combination of document D14 and D5 did not render obvious the subject-matter of claim 1. The inventive step attack based on documents

D14 and D5 had been considered sufficient, hence the combination of documents D14 and D23 had not been put forward earlier for reasons of procedural economy.

VIII. The respondent essentially argued as follows.

*Right to be heard*

The violation of the appellant's right to be heard was merely claimed to justify the late filing of documents D17 and D18 with its statement of grounds of appeal. The teachings of document P1 were cited in the application as published (see page 2, second paragraph), and the appellant had had enough time during the opposition proceedings to comment on the respondent's letter dated 28 April 2016.

*Sufficiency of disclosure*

The requirement of Rule 42(1)(e) EPC did not constitute a ground for opposition and, in addition, was not mandatory (see T 1918/07 and T 1169/08).

Considering the appellant's argument that laminated tubes fell under the definition of the term "label" in paragraph [0011] of the patent specification, the respondent pointed to the difference between a coextruded (laminate) film and a (laminate) film with an adhered label. For a (laminate) film with a subsequently applied label according to the present invention, the label was typically a reverse printed clear film, whereas a coextruded laminate film could only be surface printed. With respect to the maximal surface area labelling, the expression in column 3, lines 56 to 57, of the patent specification was clear. A maximum surface area indeed meant 100%.

By reference to T 60/89, the difference of the skilled person's knowledge for the purposes of Article 56 EPC and Article 83 EPC was explained. When assessing sufficiency of disclosure, taking into account the teaching of the patent, the skilled person would have been able to seal the end of the labelled tube without damaging the label.

*Main request - novelty*

Features [F1], [F2.2], [F3], [F4] and [F5] were not disclosed in document D5. Therefore, the subject-matter of claim 1 was new vis-à-vis document D5. It disclosed neither tubes with labels adhered to them nor a tube with maximal surface area labelling stretching into the crimped area of the tube. The cooling spiral in document D5 did not only serve for a well-defined sealing area but also for a well-controlled environment on the outside of the welding area because heat spread also towards the outer surface of the welding area.

Regarding the difference between labelled versus laminated tubes, reference was made to paragraph [0011] of the patent in suit according to which "*the term label is used herein in a broad sense to refer to a substrate that has been printed and subsequently attached to a surface so as to decorate the object or identify its contents*". It was concluded that only printed substrates qualified as labels. The respondent exemplified different possibilities of decorating a laminate film tube, i.e.:

- by printing directly on the outside of the laminate tube film

- by subsequently applying a label, typically a reverse printed clear film, to the laminate tube film
- by surface printing the label film and subsequently combining the label and laminate film tube

The possibility of directly printing on the outside of the laminate film tube was not covered by the present invention. It was a difference whether a coextruded laminate or a (laminate) film with an adhered label was used.

*Main request - inventive step*

There was consensus that document D14 was the closest prior art and that feature [F5] was the differentiating feature. However, in contrast to the appellant's arguments, document D14 did indeed disclose the order of the method steps, i.e. first the tube end was flattened and then sealed, the sealing implying heating the tube end (see document D14, page 2, line 31, to page 3, line 2; page 6, lines 18 to 21; claim 8).

The technical effect of feature [F5] was not to reduce heat impact but to avoid delamination of the label. The objective technical should not contain pointers to the technical solution. Only with an *ex post facto* view would the skilled person have been aware that the sealing step had to be adjusted for the label not to dart or flag. Other solutions were improved materials or coatings. The skilled person would have been faced with the problem of both closing the tube and improving the aesthetics. Accordingly, the problem was to provide an improved method of producing a tube with maximal surface area labelling with the label encompassing at least a portion of the sealed area while avoiding

delamination effects in the sealing area of the tube.

The solution would not have been obvious in view of document D14 alone. Document D14 was concerned with making the label edges invisible. The sealing step was not described as a problem but as a solution. The objective technical problem was already solved by the method of document D14 which contributed to the problem of making the borders of the label invisible, avoiding different thicknesses and delamination (see page 1, lines 22 to 26). It disclosed a complete teaching, and the skilled person would have had no incentive to deviate from the disclosure of document D14, for example, by heating the tube from the inside. Quite the contrary, in document D14, it was inevitable to heat from the outside to achieve a good mechanical fixing on all sides (see document D14, page 7, lines 4 to 14). The presence of a barrier layer did not prevent this as alleged by the appellant. Even the fact that in document D14 the front end of the tubular section was sealed by hot air welding, which in the context of D14 was not equivalent to "heating from the inside", would not have prompted the person skilled in the art to also use this sealing method for the tube's opposite end. At the front part of the tube, the label would not be visible. Thus, it was not necessary to withstand the heat of sealing.

As document D14 presented a complete teaching, the skilled person would not have considered document D5, which in addition did not refer to tubes with a label adhered to them. Document D5 was concerned with a cheaper and better heat sealing method (see page 4, lines 8 to 13) but remained silent on the provision of a label and delamination. The solution for this problem was the recirculation of the hot gas and the cooling

means (see page 5, last paragraph). This document disclosed a device and was primarily directed to a mechanical engineer.

Furthermore, there existed a technical prejudice regarding the claimed solution. According to document P1, it was not possible to extend the label into the sealing region (see document P1, page 3, lower part). It was explicitly "*recommended that the label's edge be positioned on the tube at least 1/4" from the start of the crimp to avoid subsequent label darting or flagging*". Document P1, dated 2004, showed that even years after the disclosure of document D5 with a priority from 1984, it is was not possible that the label extended into the sealing region. Experts had been "blind" to this knowledge all this time. Document P1 was from Avery Dennison, the world's largest material supplier, and thus should be considered the industry standard. Rather, the development went in a different direction as could be seen from document D12, which disclosed in-mould labelling. Document D12 recommended that subsequently applied labels must not extend into the end closure of the tube because the invention of the patent in suit was not yet known (see document D12, page 4, lines 5 to 12). As outlined in the case law (see Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, I.D. 10.2), one form of secondary indicia relating to a technical prejudice was a development of the art in a different direction.

Regarding the issue of a purposive selection put forward by the appellant, the board decisions cited in the Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, I.D.9.19.4, namely T 513/90 and T 659/00, did not concern a method but the

choice of material and, hence, were not applicable for the case at hand. It would not have been obvious that changing the way the tubes of document D14 were sealed would have solved the problem. Consequently, the skilled person would not have been motivated to consult document D5. The use of the teachings of document D5 was unlikely because welding the label to the tube in the sealing area was a crucial aspect of the invention of document D14.

*Admittance of a new inventive step attack (document D14 in combination with document D23)*

The new objection based on documents D14 and D23 should not be admitted. A negative opinion in the oral proceedings was not a reason for filing a new objection. Moreover, document D23 did not go beyond the disclosure of document D5. In fact, it was just a confirmation of the teachings of document D5. Thus, the newly raised objection could not put into question the inventive merits of the claimed subject-matter.

## Reasons for the Decision

1. *Right to be heard (Article 113(1) EPC 1973)*

The appellant alleges that the opposition division violated its right to be heard.

The board sees no indication, neither from the minutes nor from the reasoning in the decision of the first-instance proceedings, that the appellant's arguments were not considered. The decision of the department of first instance was based on grounds and evidence on which the appellant had had the opportunity to present

its comments during the oral proceedings. The filing of document P1 with the respondent's letter dated 28 April 2016, received by the appellant on 9 May 2016, did not hinder the appellant from bringing forward its arguments in this respect during the first-instance oral proceedings, which took place on 1 June 2016. During these oral proceedings, the appellant was given the opportunity to comment on document P1 and the alleged technical prejudice and also availed itself of this possibility (see point 11.5 of the minutes). The fact that the opposition division, in the decision under appeal, accepted the existence of a technical prejudice on the basis of this document, even though it did not mention this in its preliminary opinion, does not constitute a violation of the appellant's right to be heard.

Thus, the decision of the opposition division is based only on grounds and evidence on which the parties have had an opportunity to present their comments (Article 113(1) EPC 1973).

2. *Sufficiency of disclosure (Article 100(b) EPC 1973)*

2.1 The board agrees with the respondent that, in accordance with Rule 27(1)(e) EPC 1973 (equivalent to Rule 42(1)(e) EPC), examples should be used where appropriate but are not a mandatory requirement for a European patent application. "*The presence of examples would only be indispensable if the description would otherwise not be sufficient to meet this requirement [of Article 83 EPC]. Hence, the purpose of the "examples" [...] appeared primarily to be to complete an otherwise incomplete teaching*" (see Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, II.C.5.3). In the case at hand, the gist

of the invention lies in the manufacturing method and not in the material of the tube and/or adhesive. Moreover, a variety of appropriate materials for the tube (see paragraph [0008]) and the adhesive (see paragraph [0010]) is indicated in the patent in suit. On the basis of this information, the skilled person will be able to produce a plastic squeeze tube according to the method of claim 1, i.e. to seal a tube with a label adhered to it by heating the internal surface of the tube before applying sealing pressure, with the label encompassing a portion of the sealed area.

2.2 Claim 1 is directed to a plastic or laminate film tube and a label adhered to it, the terms being clear to the person skilled in the art in the present context. Thus, the wording used for defining the claimed invention does not cause an issue of insufficiency of disclosure.

2.3 In the board's judgment, the disclosure in column 3, lines 55 to 58, of the patent in suit ("*Advantageously, a label of the instant squeeze tube covers at least a portion, e.g. 20%, 40%, 50%, 60%, 80%, or 100% of the flattened, closed end of the squeeze tube*") further defines, as preferred embodiments, the portion of the sealed area covered by a label. According to the more general wording of claim 1 "*the label encompasses at least a portion of the sealed area of the squeeze tube, thereby producing a squeeze tube with maximal surface area labelling*", the percentage of the sealed area covered by a label is left open in the claim. Therefore, only a small portion of the sealed area might be covered by a label, as argued by the appellant. It is, however, not apparent why this would prevent the skilled person from carrying out the

invention.

2.4 Both parties submitted arguments that the same level of skill had to be applied when considering sufficiency of disclosure and inventive step. The board shares this view and refers to the Case Law of the Boards of Appeal of the European Patent Office, 9th edition 2019, I.D. 8.3 where it reads that "*[t]he same level of skill has to be applied when, for the same invention, the two questions of sufficient disclosure and inventive step have to be considered [...]. [A]lthough the same level of skill is applied for both Art. 56 and Art. 83 EPC 1973, the two starting points differ; for inventive step purposes, the skilled man knows only the prior art; for sufficiency of disclosure, he knows the prior art and the disclosed invention*".

The appellant did not submit any specific arguments why the level of knowledge of the skilled person would not be sufficient for carrying out the invention.

In summary, the invention is disclosed in a manner sufficiently clear and complete for it to be carried out by the person skilled in the art.

3. *Main request - granted patent - ground for opposition under Article 100(a) in combination with Article 54(1) EPC 1973 (lack of novelty)*

Novelty of the subject-matter of claim 1 was disputed in view of the disclosure of document D5.

While the appellant argued that the tube of document D5 anticipated all the features of claim 1, the respondent contested the disclosure of features [F1], [F2.2], [F3], [F4] and [F5]. There is agreement between the

parties that document D5 is concerned with the sealing of laminated tubes. The dispute essentially hinges on whether the laminated tubes according to document D5 implicitly comprise a laminate film tube with a label adhered to it.

The board notes that document D5 discloses laminated tubes (see page 4, first paragraph) but not a label as such and, thus, not the label-related features [F1], [F2.2], [F3] and [F4] which concern the label, the maximal surface area labelling and that the label encompasses at least a portion of the sealed area. Consequently, it is not relevant for the issue of novelty whether there is a semantic difference between labelled and laminated tubes. Even if the tube of the patent in suit were interpreted to be a tube with a label laminated on it, document D5 does not further specify laminated tubes. In particular, document D5 is silent about labels and hence about surface area labelling.

Therefore, the ground for opposition under Article 100(a) in combination with Article 54(1) EPC 1973 (lack of novelty) does not prejudice the maintenance of the patent as granted.

4. *Main request - granted patent - ground for opposition under Article 100(a) in combination with Article 56 EPC 1973 (lack of inventive step)*

4.1 Starting point - Document D14

Both parties use document D14 as a starting point for discussing inventive step. Document D14 deals with a labelled tube and its production method (see page 1, line 1 to 5). It belongs to the same technical field as

the invention and thus forms a suitable starting point for assessing inventive step.

Document D14 discloses a method for producing a plastic squeeze tube with maximal surface area labelling (see page 1, lines 1 to 5, and lines 34 to 35). The plastic tube is sealed (see page 6, lines 18 to 21). The label is adhered to the tube (see page 3, lines 20 to 21) and is, for instance, a self-adhesive label (see page 3, lines 24 to 25). The label of document D14 encompasses the surface of the sealed portion of the squeeze tube (see page 3, lines 30 to 35) and thus results in a squeeze tube with maximal surface area labelling. This disclosure is not disputed by the parties.

4.2 Distinguishing features

It is common ground between the parties that the subject-matter of claim 1 of the granted patent differs from document D14 in that "*the internal surface of the tube is heated before sealing pressure is applied*" (feature [F5]). The board also agrees with the parties that document D14 discloses that the end of the tube is closed by sealing.

The parties' views differ as to whether document D5 discloses a particular sequence of the pressing and sealing steps. In this regard, the board points out that in document D14 the ends are squeezed/pressed against each other and then sealed. It is implicitly known that the sealing step requires the application of heat. This sequence of method steps is disclosed on page 2, line 28, to page 3, line 3, and in claim 8:

"*caractérisé en ce qu'il comporte les étapes suivantes a) on applique une étiquette (12) sur pratiquement la*

*totalité de la surface externe d'un tronçon tubulaire (30) dont au moins une extrémité est ouverte ;*
*b) on obture une extrémité du tronçon tubulaire (30) par aplatissement ; et*
*c) on scelle les surfaces en regard de l'extrémité aplatie l'une sur l'autre, notamment par soudage, dans une zone où la surface externe du tronçon tubulaire (30) est recouverte par l'étiquette (12).*"

and on page 6, lines 18 to 21:
"*L'ensemble ainsi formé est ensuite rempli par son extrémité arrière, laquelle est alors fermée par écrasement du tronçon tubulaire et scellage l'une sur l'autre des deux surfaces en contact, par soudage par exemple.*"

The board cannot endorse the appellant's arguments that document D14 merely discloses the welding of the tube's rear end without further details and that both possibilities, first heating and then applying pressure and the other way round, were disclosed by document D14. The board acknowledges that the inner surface must be plasticised for welding. Although document D14 does not explicitly mention a separate heating step, the heating necessarily forms part of the sealing step. Consequently, for the skilled person, document D14 could only have been understood to mean that the tube ends are heated and sealed after pressure has been applied.

4.3 Technical effect and objective technical problem

It is established case law of the boards that the technical problem is determined vis-à-vis the closest prior art(see R 9/14, Reasons 2.4.1). Furthermore, "[a]*ccording to the established case law, the technical*

*problem addressed by an invention has to be formulated in such a way that it does not contain pointers to the solution or partially anticipate the solution, since including part of a solution offered by an invention in the statement of the problem necessarily results in an ex post facto view being taken of inventive step when the state of the art was assessed in terms of that problem [...].*
*In T 1019/99 the board stated that the correct procedure for formulating the problem is to choose a problem based on the technical effect of exactly those features distinguishing the claim from the prior art that is as specific as possible without containing elements or pointers to the solution [...]*" (see Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, I.D.4.3.1).

The gist of the invention according to the patent in suit is that the labelled surface area of a squeeze tube can be maximised by extending the label into the sealed area of the squeeze tube while avoiding that the label adhered to the tube darts or flags (see paragraph [0008]). According to the patent in suit, there are several factors which contribute to this. One feature is the labelled surface which extends into the sealed area, as reflected in feature [F3] (see paragraph [0008]). Another feature is the use of a suitable sealing technique "*which seals through the label and tube by heating the internal surface of the tube so that the label is exposed to minimal heat during sealing*" (see paragraph [0013]), as reflected in feature [F5].

Thus, feature [F5] contributes to the effect that the label does not delaminate from the tube. Based on this technical effect, the objective technical problem can

be seen in providing an improved method for sealing a tube with maximal surface area labelling with the label encompassing at least a portion of the sealed area while avoiding delamination effects in the sealing area of the tube.

The appellant referred to paragraph [0013] of the patent in suit. In this paragraph, feature [F5] is related to the label's reduced exposure to heat during sealing. It reads:

"*Because the label of the instant squeeze tube encompasses at least a portion of the seal area of the squeeze tube, the instant invention embraces the use of a tube filling and sealing machine which seals through the label and tube by heating the internal surface of the tube so that the label is exposed to minimal heat during sealing.*"

Hence, according to the appellant, the technical effect was the reduction of heat impact and the objective technical problem was formulated as providing a method for sealing a tube where the heat impact on the outer surface of the tube was minimised.

The board does not concur with this formulation of the technical effect and the objective technical problem because it contains pointers to the solution and is based on an *ex post facto* view. Reducing heat impact on the label in the sealed area results in reducing delamination of the label in the sealed area. The distinguishing feature is that the internal surface of the tube is heated before pressure is applied so that the label is exposed to minimal heat during sealing (see paragraph [0013] of the patent in suit). Thus, the reduced heat impact forms part of the solution and

cannot be part of an objective formulation of the technical problem.

4.4 Obviousness

4.4.1 The person skilled in the art has the same level of skill when considering sufficiency of disclosure and inventive step (see point 2. above). In the case at hand, the invention is directed to the application of a known sealing method for manufacturing a specific product, in particular the sealing of a tube end with a label adhered to it. The fact that the skilled person would have supplemented the information given in the patent for the claimed invention to be carried out does not necessarily mean that, at the priority date and without knowing the teaching of the patent, the claimed subject-matter would have been obvious for the skilled person.

4.4.2 In view of document D14 alone

Document D14 is concerned with the aesthetical appearance of a labelled tube, especially with respect to the thickness of the label and its delamination (see document D14, page 1, lines 22 to 26). To solve the problem, the label extends over the whole surface.

Starting from document D14, the person skilled in the art would not have found any incentive to change the disclosed sealing method for the end of the tube (see document D14, page 2, lines 4 to 6 and line 28, to page 3, line 2, and claim 8). Document D14 constitutes a complete teaching. There is no gap which must be filled.

The appellant's arguments that the skilled person would

implicitly have been taught to heat from the inner side of the tube to not damage the label cannot be accepted because document D14 teaches the contrary (see point 4.2 above). Nor does the use of a barrier layer in the label, a multilayer label or a self-adhesive label in document D14 hint at feature [F5] because the general teaching of document D14 is that the end of the tube is first pressed together and then sealed. No negative side-effect of this sequence of steps is mentioned. Even if in document D14 the front end of the tubular section is sealed by hot air welding (see document D14, page 6, lines 13 to 15), the person skilled in the art would not have been prompted to use this sealing method also for the tube end since the front and back end sealings of the tube have different requirements. In particular, at the front end sealing, the label is not visible but at least partly covered by the tube head (see document D14, page 2, lines 10 to 16; page 3, lines 8 to 9). For these reasons, document D14 alone cannot render obvious the subject-matter of claim 1.

4.4.3 In view of the teachings of document D5

It is not contested by the parties that document D5 discloses feature [F5]. In fact, a hot air sealing method is used for the end of a laminated tube (see document D5, page 2 (first page of description), lines 1 to 7). As shown in Figure 1 of document D5, first the inner side of the tube is heated by hot air via nozzle 10, then jaws 22 press the ends of the tube together. It is acknowledged even in the patent in suit that hot air sealing is known and that "*[m]achines of this type are routinely used in the art of squeeze tube, bag and pouch manufacturing*" (see paragraph [0013] of the patent in suit).

The question is whether there is any teaching in the prior art that would have prompted the person skilled in the art to modify the method disclosed in document D14 by implementing the generally known and widely used process disclosed in document D5.

As, for instance, elaborated in T 1014/07, "*the mere existence of teachings in the prior art is not a conclusive reason for explaining that the skilled person would have combined these teachings in order to solve the problem that he or she is confronted with. For the determination of the obviousness or non-obviousness of claimed subject-matter, it is not decisive that teachings are known – it must be decided whether or not the skilled person would have combined the known teachings such as to arrive at the claimed subject-matter when attempting to solve the underlying technical problem. Thus, the combination of known teachings may result in non-obvious subject-matter, namely when the skilled person is not motivated, for example by promptings in the prior art, to make such a combination. Under these circumstances the presence of any special effect arising from the combination is not necessary to establish an inventive step*" (see Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, I.D.9.3).

As established in point 3., document D5 discloses laminated tubes but not a label. For this reason alone, document D5 is not suitable for teaching the skilled person how to avoid the delamination effects of a label in the sealing area of a tube. Even if document D5 discloses to heat the internal surface of the tube before sealing pressure is applied, the skilled person would have found no reason to implement this disclosure in the process known from document D14. In view of

this, a combination of documents D14 and D5, and thus the solution according to present claim 1, would not have been obvious for the person skilled in the art.

4.4.4 Purposive selection

In accordance with the Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, I.D. 9.19.4, good reasons for a purposive selection exist "*[i]f, for a particular application of a known process, the skilled person could obviously use a material generally available on the market and suitable for the purpose, and was also highly likely to use it for reasons irrespective of its characteristics, such use should not be considered as inventive on account of those characteristics alone. It stood to reason that if carrying out such a step was itself already obvious for other reasons, the natural choice of the particular means on the market-place was devoid of mental or practical effort, or of 'purposive selection', in the absence of anything to the contrary [...]*".

Starting from document D14, the skilled person would have had - according to the appellant - only two possibilities, either to first heat and then press or to first press and then heat. Being faced with the two alternatives, it would not have been inventive to choose one of them. The method of hot air welding was known (see document D5), available on the market (see paragraph [0013] of the patent in suit) and suitable for the tube of document D14, and it was highly likely that the person skilled in the art would have applied this step.

The board is not convinced by this reasoning. It is not disputed that the process of document D5 was known and

available on the market. Even if the process of document D5 were in theory suitable for sealing the labelled tube of document D14, it would not have been obvious to use it for the tube of document D14 for the reasons under point 4.4.3 above.

4.5 For these reasons, the grounds for opposition according to Article 100(a) in conjunction with Article 56 EPC 1973 do not prejudice the maintenance of the patent as granted.

5. *Admittance of new inventive step objection*

During the oral proceedings before the board, the appellant raised a further inventive step objection based on a combination of documents D14 and D23. According to the appellant, the submission of the new objection was justified by the board's conclusion on inventive step in view of documents D14 and D5. Moreover, document D23 clearly mentioned the technical effect of a reduced heat impact and proved that the method of document D5 was well-established.

The board notes that the issue of inventive step of the subject-matter of claim 1 in view of a combination of documents D14 and D5 has been a central issue of the decision under appeal and throughout the appeal proceedings. The fact that the board essentially confirmed the conclusion previously reached by the opposition division cannot justify the filing of a new inventive step objection at the final stage of the appeal proceedings. Furthermore, the board does not share the appellant's view that document D23 is *prima facie* more relevant for the question of inventive step than document D5. Apart from the fact that document D23 shows the industrial application of the process

disclosed in document D5 (see pages 3 and 4 of document D23), something that is not disputed, its teaching does not substantially go beyond document D5.

For these reasons, the board sees no reasons for admitting the inventive step objection based on a combination of documents D14 and D23 (Article 13(2) RPBA 2020).

## Order

## For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

N. Schneider P. Lanz

Decision electronically authenticated