

I. Facts and applications

- 1 European Patent No. 3 289 627 entitled "METHOD OF HANDLING USED BATTERIES, IN PARTICULAR RECHARGEABLE BATTERIES AND BATTERY PROCESSING PLANT "
was granted on European patent application No. 16 719 400.0 filed on 28-04-2016 as international application No. PCT/EP2016/059 526. The application claimed the priority of DE 102015207843, filed on 28-04-2015.

The mention of the grant of the patent was published in the European Patent Bulletin on 20-05-2020 The owner of the patent is
Duesenfeld GmbH
Rothbergstraße 8
38176 Wendeburg
DE.
- 2 Opposition has been filed by:
Volkswagen Aktiengesellschaft
Patent Department
Letterbox 1770
38436 Wolfsburg
DE
on 15-02-2021.
The opponent requested revocation of the patent in its entirety on the basis of Art. 100(b), 100(c) and Art. 100(a) EPC in conjunction with Art. 56 EPC. He requested oral proceedings.
- 3 The following evidence was submitted within the objection period:
- Caveats
- | | |
|----|------------------|
| D1 | WO 2010149611 A1 |
| D2 | CN 103259062 B |
- D2-Ü. Translation into English of CN 103259062 B
- | | |
|----|-------------------|
| D3 | US 20160049699 A1 |
| D4 | KR 10-0665626 B1 |
- D4-Ü. Translation into English of KR 10-0665626 B1

D5	Infinite Power Solutions presents paper-thin battery
D6	DE 10 2012 024 876 A1
D7	DE 44 24 825 A 1
D8	WO 2010102377 A1
D9	EN 10 2011 110 083 A1
D10	VDMA standard 24351 Drying technology
D11	General and Physical Chemistry, p. 4/4, 4/9, 4/35
D12	General and Physical Chemistry, p. 44/3
D13	General Chemistry, p. 14

- 4 In his letter received on 20-07-2021, the patent proprietor requested that the opposition be rejected (Article 101(2) EPC). In the alternative, he requested maintenance of the patent as amended in accordance with auxiliary requests 1-6. No oral proceedings were requested.
- 5 In his letter received on 27-10-2021, the opponent provided additional arguments against the patent proprietor's main request and raised objections to the auxiliary requests.
- 6 On 16-12-2021, the Opposition Division convened an oral hearing for 29-09-2022. In addition, a provisional, non-binding assessment was issued.
- 7 In a text message dated 02-05-2022, the parties were informed that the oral hearing would be held by video conference.
- 8 By letter dated 11-07-2022, the opponent put forward further arguments in support of its request for revocation of the patent.
- 9 In its response to the summons received on 27-07-2022, the patent proprietor filed amended claims 1-10 as a new main request and submitted arguments in support of its request to maintain the patent on the basis of the amended claims. In addition, he filed new sets of claims for auxiliary requests 1-8.

- 10 By letter dated 30-08-2022, the opponent put forward further arguments in support of its request for revocation of the patent.
- 11 By letter dated 27-09-2022, the patent proprietor a decision of the German Patent and Trade Mark Office to which the opponent referred. The document is referred to as D14.
- 12 The hearing took place on 29-09-2022 as a video conference.
- During the oral proceedings, the opponent submitted the following documents:
D15: WO 2014/155784 A1
D15a: An English translation of D15 D15b: A
German translation of D15
- The patent proprietor new auxiliary requests 1 and 2, as well as a description adapted auxiliary request 2.
- 13 The decision is based on the following
applications: Main request: claims 1-10 dated 27-
07-2022
- Auxiliary request 1: claims 1-9 filed during the oral proceedings Auxiliary request
2: claims 1-4 filed during the oral proceedings
- 14 The independent claims of the main request (identical to the
independent claims of the patent) are as follows:
1. A method of treating used lithium batteries (10) comprising the steps
of:
- (a) Shredding the batteries (10) so that shredded material (24) is
obtained,
 - (b) Inactivating the comminuted material (24) by drying, so that an
inactivated comminuted material (42) is obtained,
characterized in that
 - (c) drying at a pressure of no more than 300 hPa and no more than 80
°C and
 - (d) the inactivated comminuted material (42) is filled into a transport
container (46).
5. Battery processing plant for treating used batteries, especially lithium
batteries, with:
- (a) a shredding unit (18) for shredding the batteries (10), so that
shredded material (24) is obtained,
 - (b) an inactivating device in the form of a drying device (26) for inactivating
the comminuted material (24) and
-

(c) a vacuum system to the drying device (26),

characterized by

(d) a filling device (44) for filling the inactivated comminuted material (24) into a transport container (46),

(e) wherein the vacuum unit is connected to the drying device (26) for generating a vacuum in the drying device (26) of at least 300 hPa, and

(f) wherein the drying device (26) is designed for drying at a temperature of at most 80 °C.

14.1 The independent claims of auxiliary request 1 are as follows:

1. A method of treating used lithium batteries (10) comprising the steps of:

(a) Shredding the batteries (10) so that shredded material (24) is obtained,

(b) inactivating the comminuted material (24) by drying at a pressure of at most 300 hPa and at most 80 °C, so that an inactivated comminuted material (42) is obtained,

(c) wherein the inactivated comminuted material (42) is placed in a transport container (46) is filled and

(d) whereby the drying of the comminuted material is only ended when no flammable or explosive gas mixture can form above the filled comminuted material after the drying process has ended.

5. Battery processing plant for treating used batteries, especially lithium batteries, with:

(a) a shredding unit (18) for shredding the batteries (10), so that shredded material (24) is obtained,

(b) an inactivating device in the form of a drying device (26) for inactivating the comminuted material (24) and

(c) a vacuum unit connected to the drying device (26), which is arranged to dry the comminuted material (24) until an electrolyte content is so small that an electrochemical reaction is impossible,

characterized by

(d) a filling device (44) for filling the inactivated comminuted material (24) into a transport container (46),

(e) wherein the vacuum installation with the drying device (26) for generating a vacuum in the drying device (26) of at least 300 hPa

is connected and

(f) wherein the drying device (26) is designed for drying at a temperature of at most 80 °C.

14.2 The independent claim of auxiliary request 2 reads as follows:

1. A method of treating used lithium batteries (10) comprising the steps of:

(a) Shredding the batteries (10) so that shredded material (24) is obtained,

(b) Inactivating the comminuted material (24) by drying at a pressure of at most 300 hPa and at most 80 °C, so that an inactivated comminuted material (42) is obtained,

(c) wherein the inactivated comminuted material (42) is placed in a transport container (46) is bottled,

(d) whereby the drying of the comminuted material is only ended when no flammable or explosive gas mixture can form above the filled comminuted material after the drying process has ended,

(e) whereby the formation of hydrogen fluoride is prevented during drying and

(f) no additional material is added when inactivating the shredding material (24).

II. Reasons for the decision

15 Admissibility

15.1 The opposition is admissible because it meets all the requirements Articles 99(1) and 100 EPC and Rules 3(1) and 76(1) and (2) EPC.

15.2 D14 was filed after the date under R. 116(1) EPC and is not admissible because the document is a decision from 2022 and therefore does not correspond to prior art (R. 116(1) and Art. 114(2) EPC).

15.3 D15 was filed during the oral proceedings. The document corresponds to a family member of D3. Therefore, the patent proprietor is not surprised by the subject-matter of D15. D15 is prima facie relevant for the

procedure because the document proves that the subject-matter of D3 was disclosed before the priority date of the patent. Consequently, D15 must be allowed (R. 116(1) and Art. 114(2) EPC).

No differences in subject matter were identified between D3 and D15.

Consequently document D3 is below to interpret document D15. The references refer to document D3 in each case

Main application

16 Art. 83 EPC - **Feasibility**

16.1 The opponent argues that the invention is not practicable for batteries containing solid-state electrolytes, as these cannot be inactivated by drying.

16.2 It is undisputed that such solid-state electrolyte batteries were known at the time of priority.

However, the skilled person wishing to carry out the claimed invention will exclude any embodiment which is meaningless and not in accordance with the teaching of the application (Guidelines F-III, 1).

The skilled person reading a claim which states that the comminuted material is to be inactivated by drying knows that this only makes sense if there is also something to dry. A reasonable reading of the claim precludes the skilled person from attempting to dry non-dryable comminution material.

16.3 The opponent also mentions decisions T 512/12 and T 239/13, and argues that in the present case the definition of the term "battery" cannot be limited by the description (to liquid electrolyte batteries).

With regard to the above decisions, the Opposition Division notes that they do not concern batteries and that the subject-matter is very different from the present case.

As regards the definition of the term "battery", the Opposition Division is of the opinion that even in the case where the term would be considered to allow the treatment of solid-state batteries, the step (b)

of claim 1, namely inactivation by drying, exclude such a process from the subject matter of the claim. It is obvious to a person skilled in the art that drying with the aim of inactivating solid electrolyte batteries is not technically meaningful in the context of the patent.

- 16.4 Even if the skilled person were not to interpret the claim in this way, taking into account the entire disclosure (in particular §12) and the common general knowledge, he could directly and unambiguously conclude that only the treatment of liquid electrolyte batteries would work and would be technically useful. Therefore, the claimed invention is sufficiently disclosed, even if a broad interpretation of the claim could include subject-matter that does not work (see Case Law of the Boards of Appeal of the European Patent Office, Tenth Edition, Section II.C.5.4).
- 16.5 Therefore, the Opposition Division is of the opinion that the requirements of Art. 83 EPC do not preclude the maintenance of the patent.

17 Art. 123(2) EPC

17.1 Claim 5 reads as follows, with the amendments to the original version (claim 7) being clarified:

5. Battery processing plant for treating used batteries, especially lithium batteries, with:

- (a) a shredding unit (18) for shredding the batteries (10), so that shredded material (24) is obtained,
- (b) an inactivating device in the form of a drying device (26) for inactivating the comminuted material (24) and
- (c) a vacuum system connected to the drying device (26),

characterized by

- ~~(d) die Inaktivierungsvorrichtung eine Trockenvorrichtung (26) umfasst und~~
- (d) a filling device (44) for filling the inactivated comminuted material (24) into a transport container (46),
- (e) *wherein* the vacuum unit is connected to the drying device (26) for generating a vacuum in the drying device (26) of at least 300 hPa and
- (f) wherein the drying device (26) is designed for drying at a temperature at most 80 °C.

- 17.1.1 With respect to claim 5, the opponent argues that the wording "*a vacuum of at least 300 hPa*" is the opposite of the original disclosure, namely of p. 4, *line 26: "under a pressure of at most 300 hPa"*.

Firstly, the opponent argues that, from a purely linguistic point of view, "at least 300" equivalent to "300 or more". Secondly, due to the connection to pressure with the unit hPa, it is clear that "a pressure of at least 300 hPa" is meant in the claim.

The opponent additionally argues that only a rough vacuum can be achieved with the jet pumps mentioned in the application (cf. original claim 11) and that the skilled person would therefore understand the limit of 300 hPa rather as a lower limit.

- 17.1.2 However, the claim speaks of "*generating a vacuum... of at least 300 hPa*" and not of generating "a pressure of at least 300 hPa". It is not clear whether "vacuum" and "pressure" can be understood to be synonymous in the wording of the claim.

It is clear from the wording that because we talking about a vacuum, the pressure must be lower than the normal pressure (Dn). Technically, the wording "creating a vacuum of at least 300 hPa" could be interpreted in three different ways. Firstly, in that a vacuum is generated with a pressure of at least 300 hPa, as argued by the opponent, i.e. with a pressure in the range [300 hPa, Dn]. Secondly, in that a vacuum is created with the pressure being at least 300 hPa lower than the normal pressure, i.e. in the range]0, On - 300 hPa]. Thirdly, a vacuum is generated with a pressure of at most 300 hPa, i.e. in the range]0, 300 hPa].

The expression in the claim is not unambiguously clear and must therefore be interpreted by the skilled person. The skilled person would therefore refer to the description. He would understand from §19 that "*the vacuum* must be selected *such that* the vapor pressure is undercut" and therefore drying should take place under "*a pressure of at most 300 hPa*".

Consequently, the skilled person understands that a "high vacuum" corresponds to a "low pressure" and that the claim should be interpreted according to §19 as a pressure range of at most 300 hPa. Therefore, the skilled person understands that the two above formulations are not contradictory but synonymous.

With regard to the jet pumps, as also shown by the opponent, pressure values below 300 hPa can also be achieved with the jet pumps (e.g. a lower limit of 6 hPa mentioned by the opponent). The use of such pumps therefore does not appear to be compatible with the aforementioned
Claim interpretation contradictory.

17.1.3 Claim 5 thus fulfills the requirements of Art. 123(2) EPC.

17.2 In response to the objections in the summons to oral proceedings, the patentee amended claim 8 to the effect that the gas cleaning device comprises the condenser.

The claim is now as follows:

8. battery processing system according to any one of claims 5 to 7,
characterized by a vacuum system which

(a) a vacuum pump (30) and

(b) a gas purification device (32) located between the drying device
(26) and the vacuum pump (30),

(c) wherein the gas purification device (32) comprises a condenser (34)
condensing electrolyte.

17.2.1 The subject-matter of claim 8 is based in the original documents on p. 8, lines 16-21, on p. 11, lines 13-23, on p. 14, lines 31 to p. 15, line 7 and p. 14, line 31 to p. 15, line 7.

17.2.2 The requirements of Art. 123(2) EPC are thus fulfilled.

17.3 In summary, the Opposition Division is of the opinion that the requirements of Art. 123(2) EPC do not preclude maintenance of the patent in accordance with the main request.

18 Art. 123(3) EPC

18.1 The amendments clearly correspond to a limitation of the subject matter of the claim compared to the claims of the patent in suit.

The main request thus fulfills the requirements of Art. 123(3) EPC.

19 Art. 56 EPC - **Closest** prior **art**

19.1 The speaker offers D1, D4, D8 and D9 as starting points.

- 19.2 The present patent is based on the task of providing a method and a battery processing plant, whereby the battery can be inactivated without additional material and whereby a shredded material that is safe for transportation is obtained, so that the formation of e.g. fluorophosphates is excluded (§11 of the patent).

This task is solved by inactivation by drying (claims 1 and 5 of the patent).

- 19.3 The following applies to potential documents.

- 19.3.1 D1 is based on the task of safely inactivating the batteries so that a shredded product that is safe for transportation is obtained (p. 2, lines 6-14 and lines 24-27 of D1).

This task is solved by comminution in the presence of fire protection and binding agents (claim 1), whereby the comminution can be carried out in a water bath with subsequent drying (p. 11, lines 10-12; p. 12, lines 1-13).

D1 does not reveal the pressure or temperature.

- 19.3.2 D4 is based on the task of treating cobalt-containing batteries (p. 3: "Technical Task" of D4-Ü).

The solution to this task includes inactivation by drying (step (b), p. 3-5).

D4 discloses neither the pressure nor the filling into a transport container. D4 mentions the possibility of drying in a lult at 300-550 °C (p. 4 and 5 of D4-Ü).

- 19.3.3 D8 is based on the task of used Alkali manganese cells (§2 to §4 of D8).

The solution to this problem contains inactivation by drying (§18).

D8 discloses neither the pressure nor the filling into a transport container. A temperature of 149 °C to 427 °C is suggested (§32). Also, the process is meant for Alkali manganese cells and not for lithium batteries.

Because D8 addresses other battery types and suggests temperatures higher than 80 °C, it is not considered a promising starting point.

- 19.3.4 D9 is based on the task of improving a complex process in the state of the art (§4 of D9).

The solution to this problem involves inactivation by drying at 80 °C (§21).

D9 discloses the drying temperature (§21) and mentions the atmosphere for heat treatment (22). Filling into a transport container is not disclosed.

Drying takes place in a pre-dryer (28; §36), followed by decomposition at high temperature (§24, §38). The process is preferably continuous (§16).

That is why D9 is a promising starting point.

- 19.4 Based on the above, the Opposition Division considers that D1, D4 and D9 are possible starting points for the present invention.

Because D1 also discloses filling into a transport container, because the present claims do not prohibit the presence of the additives or a water bath, and because D1 does not suggest a temperature above 80 °C, D1 is considered a better starting point than D4.

D9 is considered an even better starting point than D1 because in the context of D9 drying corresponds to removal of the electrolyte, whereas in D1 a filtrate is dried after a water bath.

- 19.5 D9 is therefore regarded as the closest state of the art.

20 Art. 56 EPC - **Inventive step based on D9**

- 20.1 D9 discloses (the references in brackets refer to this document) a method for treating used lithium batteries (title) comprising the steps:

(a) Shredding (§1, step (a), in device 12, Fig. 1) of the batteries so that shredded material is obtained,

(b) Inactivation of the comminution material by drying (§21 ; in the comminution device 20, cf. §34 and §35, and in the pre-dryer 28, cf. §36; electrolyte is removed from the shredded material in both steps), so that an inactivated shredded material is obtained,

whereby

(c) drying takes place at a maximum of 80 °C (§21, §36).

- 20.2 The subject matter of claim 1 thus differs from the known method in that

(c) drying takes place at a maximum pressure of 300 hPa

(Here, D9 mentions that the shredded material is removed from the

condensers 20 of the comminution device 12 (§34) and 34 of the predryer 28 (§36). Claim 1 of D9 mentions that the comminution device is under inert gas or vacuum, whereas the atmosphere for the predryer in §36 is "inert gas" and is not mentioned in the general part of the description in §21) and

(d) the inactivated shredded material is filled into a transport container.

20.3 The patentee argues that feature (b), inactivation by drying, is not disclosed in D9 because the inactivation only takes place in the oven 44 and only a quantity of electrolyte is removed by the drying steps in the devices 12 and 28. He further argues that "inactive" means that the comminuted material can be transported.

20.4 The Opposition Division cannot agree with this description for the following reasons: There is no specific definition of "inactivating" in the patent. The claim also does not require that inactivation should take place exclusively by drying. A threshold value (corresponding to a "residual moisture") is not defined.

Because the comminuted material is passed on after the pre-dryer to the separator 38 and classifier 42, and here, for example, the cladding material, the anode, the pouch foil and the cathode are separated (Fig. 1), the Opposition Division considers it to be implicitly disclosed that at the transition from the pre-dryer 28 to the separator 38 the comminuted material must be dry in the sense that no significant amount of electrolyte is present and that the comminuted material must therefore also be regarded as inactivated.

For these reasons, technical feature (b) is not suitable to establish a difference from the previously known method of D9 and said feature is considered to be disclosed in D9.

20.5 The technical effect of the pressure in feature (c) is that the vapor pressure of the electrolyte components falls below 80 °C (§19 of the patent). This allows the components of the electrolyte solvent to be removed more quickly and completely.

The task to be solved with this feature (c) can therefore be seen as improving the removal of the electrolyte components.

20.6 The technical effect of feature (d) is to make the shredded material as such suitable for transportation.

The task to be solved with this feature (d) can be in enabling the transportation of the shredded material.

- 20.7 The patentee argues that the above features are synergistic because drying allows the comminuted material to be filled into containers in an inactive and therefore safe state for transportation.

However, the shredded material is already dried after the D9 in the shredding device 12 and in the pre-dryer 28 (§34 to §36). It is clear that only dried material reaches the separator 38. The patentee argues that inactivation and complete drying only takes place in the oven 44. However, it is clear that in furnace 44 the binder is decomposed to a temperature > 400 °C (§38), and that the electrolyte already removed in pre-dryer 28.

Therefore, there is no interaction between the pressure during drying and the filling of the shredded material into the container. For drying, it is not important whether the product is filled or not. On the other hand, the pressure at which the product was dried is not important for filling transportation as such.

Consequently, the two above-mentioned tasks, which are each solved by technical features (c) and (d), can be regarded as independent subtasks within the meaning of guidelines G-VII, 7.

- 20.8 Regarding the pressure in feature (c):

- 20.8.1 D9 mentions that the pressure of the inert gas in the comminution device is adjusted (§34), but does not mention the value of the pressure. In the case of the pre-dryer, setting the pressure is also not explicitly mentioned (§36, §21) but it is clear in the opinion of the opposition division that the skilled person must set a pressure value. Therefore, the skilled person has an incentive to set the pressure.

- 20.8.2 D3 mentions the task of safely and completely removing the common components of the electrolyte (§12, §13) and discloses evaporation data from the electrolytes (§33, §34). The skilled person would therefore the teaching of this document for the above task to improve the removal of the electrolyte.

Although this step in D3 carried out before the crushing of the battery (§31 ; Fig. 1), the skilled person will recognize the general teaching of how to adjust the pressure and temperature evaporation in order to improve the evaporation of the solvents of the electrolyte. Also, the teaching of D3 in §14 and §15 is general, and not specific to the case where evaporation is carried out before crushing.

20.8.3 D3 teaches the removal of electrolytes by drying under reduced pressures (in the claimed range, see §34, §35 and Table 1) at temperatures of 80-150 °C (§35, Table 1) where a conversion temperature of 244 °C is exceeded in order to volatilize all electrolyte components including EC (§33, §34).

The temperature of 80 °C is within the claimed range and is compatible with the teaching of D9, where a temperature of 80 °C is used (§36, §21).

20.8.4 It is therefore obvious to the skilled person to set a pressure in the stressed area on the basis of §33 to §35 and Table 1 of D3 to solve the above-mentioned sub-task.

20.9 With regard to characteristic (d):

20.9.1 It should be noted that the transport container and its purpose not further limited in claim 1, and that the claim also allows intermediate steps between drying and filling.

20.9.2 In order to implement a batchwise process, the skilled person would obviously use transport containers if necessary. For example, the components of the comminuted material in Fig. 1 of D9, namely the cladding material, the anodes and cathodes as well as the pouch foil and the separator would almost inevitably be conveyed into some kind of container unless they were processed further immediately.

20.10 In addition, D6 discloses a suitable transport container (§4, §8, §9) which the skilled person would use if required. Although according to D6 deactivation powder (§10) may be used, this is not excluded from the claim.

20.11 Therefore, the Opposition Division considers that, on the basis of both common general knowledge and D6, the skilled person would, if necessary, fill the comminuted material into a transport container in order to be able to transport it for further processing.

20.12 The above reasoning is directly transferable to claim 5.

20.13 Thus, the subject-matter of claims 1 and 5 is not based on an inventive step within the meaning of Article 56 EPC and the patent cannot be maintained on the basis of the main request.

Auxiliary request 1

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

21.1 The following feature was added to claim 1 on the basis of the original claim 6 (patent claim 4):

(d) whereby the drying of the comminuted material is only ended when no flammable or explosive gas mixture can form above the filled comminuted material after the drying process has ended.

21.2 The following feature was added to claim 5 on the basis of the original claim 8 (patent claim 6):

(c) a vacuum unit connected to the drying device (26), which is arranged to dry the comminuted material (24) until an electrolyte content is so low that an electrochemical reaction is impossible,

21.3 The amendments clearly correspond to a restriction of the subject matter of the claim.

21.4 The auxiliary request thus fulfills the requirements of Art. 123(2) and (3) EPC.

22 Art. 84 EPC

22.1 Claim 4 has been adapted as follows:

4. process according to one of the preceding claims, characterized in that the drying of the comminuted material is only completed,

~~wenn sich nach Beenden des Trocknens kein entzündliches oder explosives Gasgemisch über dem abgefüllten Zerkleinerungsgut mehr bilden kann und/~~

or-where the shredded material is so dry no flammable or explosive gas mixture can arise in the transport container or during further processing.

As a result of the amendment, the word "if" is missing and the claim becomes unclear.

22.2 In claim 5, the feature "(c) a vacuum unit connected to the drying device (26) which is arranged..." is unclear because the part "which is arranged" can ambiguously refer either to the vacuum unit (incorrect) or to the drying device (correct).

22.3 These ambiguities are introduced by the amendments made and can therefore be examined in accordance with G 3/14.

22.4 Auxiliary request 1 therefore does not meet the requirements of Art. 84 EPC.

23 Art. 56 EPC

- 23.1 The patent proprietor argues that D9 does not disclose that the comminuted material is dried in the specified manner and that D3 does not mention the present aim of drying, namely filling for transportation, and therefore does not give the skilled person an incentive to dry the comminuted material completely.
- 23.2 However, the aim of D3 is to remove the electrolyte from the battery as completely as possible for safety reasons (e.g. §1, §12, §13, §60, §73 of D3). The specialist is therefore well aware that the electrolyte can form a flammable or explosive gas mixture and that it must therefore be removed in such a way that this cannot happen.
- 23.3 The skilled person would thus also arrive at the subject matter of claims 1 and 5 of auxiliary request 1 without any inventive step.
- 23.4 Thus, the subject-matter of claims 1 and 5 of request 1 is also not based on an inventive step within the meaning of Article 56 EPC.

Auxiliary request 2

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

- 24.1 In addition to auxiliary request 1, the following features have been added to claim 1. The basis of the amendments is shown in brackets.
(e) *whereby the formation of hydrogen fluoride is prevented during drying* (p. 4, lines 30-33) and
(f) *no additional material is added when inactivating the shredding material* (24). (P. 2, Z. 28-29)
- 24.2 The opponent argues that the advantage of not having to add additional material does not disclose that no material is in fact added.

The Opposition Division cannot accept this argument. P. 2, lines 28-29 of the application as originally filed does mention that no material needs to be added. The skilled person recognizes here precisely the teaching that it is advantageous not to add anything.
- 24.3 The amendments clearly correspond to a restriction of the subject matter of the claim.

24.4 The auxiliary request thus fulfills the requirements of Art. 123(2) and (3) EPC.

25 Art. 84 EPC

25.1 The changes originate from the description and therefore clarity can be checked (G 3/14).

25.2 The opponent argues that feature (e) is not clear because no hydrogen fluoride is formed in the range < 300 hPa and < 80 °C according to §19 of the patent anyway questions why the feature is not defined by a lower temperature. It was argued that it was unclear how exactly the formation of hydrogen fluoride should be prevented.

25.3 However, D3, for example, shows that hydrogen fluoride can also be formed at 80 °C. The feature indirectly restricts the pressure and temperature range so that no hydrogen fluoride can be formed. This in itself is clear, and the skilled person is also able, on the basis of §19 of the patent, to carry out this teaching by adjusting the pressure and in particular the temperature accordingly.

25.4 Auxiliary request 1 thus fulfills the requirements of Art. 84 EPC.

26 Art. 56 EPC

26.1 D9 continues to be regarded as the closest prior art by both the parties and the Opposition Division.

26.2 It should be noted that the Opposition Division does not understand the inert gas in D9 as additional material according to feature (f), and therefore D9 does not teach such material.

26.3 D3 is based on the recycling of fluorine, whereby hydrogen fluoride is formed (e.g. §13 and §36). Therefore, D3 requires a combination of pressure and temperature to produce FH. In D3, additional material is used, namely a fluorine case (e.g. §15). Therefore, the teaching D3 is not consistent with that of the present claim.

On the basis of D9, the skilled person would not refer to document D3 with regard to amended claims 1 and 5, since the teaching of D3 necessarily requires that fluorine is to be expelled from the electrolyte. This directly contradicts features (e) and (f). Furthermore, in

D3 removes the fluorine compounds from the battery in two ways, namely by adding water with binding agents (wet process) or by heating above the temperature at which hydrogen fluoride is formed (dry process).

The skilled person would therefore set the pressure and temperature based on the

Do not set the state of the art in such a way that no FH is created.

26.4 The subject-matter of claim 1 is thus based on an inventive step within the meaning of Art. 56 EPC.

27 In view of all the arguments and evidence, the Opposition Division therefore concludes that auxiliary request 2 in conjunction with the adapted description satisfies the requirements of the EPC.

Article 106
Appealable decisions

- (1) The decisions of the Receiving Section, the Examination Divisions, the Opposition Divisions and the Legal Division are subject to appeal. The appeal has a suspensive effect.
- (2) A decision that does not conclude proceedings against a party may only be appealed together with the final decision, unless a separate appeal permitted in the decision.
- (3) The right to appeal against decisions on cost allocation or cost assessment in opposition proceedings may be restricted in the Implementing Regulations.

Rule 97
Appeal against cost allocation and cost assessment

- (1) The allocation of the costs of the opposition proceedings cannot be the sole subject of an appeal.
- (2) A decision on the determination of the amount of the costs of the appeal proceedings can only be contested by means of an appeal if the amount exceeds that of the appeal fee.

Rule 98
Surrender or lapse of the patent

An appeal against the decision of an opposition division may also be filed if the European patent has been surrendered in all the designated contracting states or if the European patent has lapsed in all these states.

Article 107 Parties entitled to
appeal and parties to the proceedings

Any party to the proceedings who is adversely affected by a decision may lodge an appeal. The other parties to the proceedings are involved in the appeal proceedings.

Article 108
Time limit and
form

The appeal must be filed with the European Patent Office in accordance with the Implementing Regulations within two months of notification of the decision. The appeal shall not be deemed to have been filed until the appeal fee has been paid. Within four months of notification of the decision, the appeal must be substantiated in accordance with the Implementing Regulations.

Further information on filing an appeal

- (a) Pursuant to Rule 1 and Rule 2(1) EPC, the appeal may be filed by direct delivery, post or by technical means of communication. The details and conditions laid down by the President of the European Patent Office and any special formal and technical requirements must be observed (Rule 99(3) EPC).
- (b) The addresses of the receiving offices of the European Patent Office are as follows:

(i) European Patent Office D-80298 Munich Germany Fax: +49 89 2399-4465	(ii) European Patent Office Postbus 5818 NL-2280 HV Rijswijk (ZH) Netherlands Fax: +31 70 340-3016	(iii) European Patent Office D-10958 Berlin Germany Fax: +49 30 259 01-840
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- (c) The appeal must contain the name and address of the appellant in accordance with Rule 41(2)(c) EPC, a reference to the contested decision and a request specifying the subject-matter of the appeal. In the statement of grounds of appeal, the appellant must state the grounds on which the contested decision is to be set aside or the extent to which it is to be amended and the facts and evidence on which he bases his appeal (Rule 99(1) and (2) EPC). The notice of appeal and any subsequently filed statement in support of the appeal must be signed (R. 50 (3) EPC).
- (d) The amount of the appeal fee is laid down in the Rules relating to Fees. The list of fees and expenses of the EPO or a reference to the current version is published regularly in the Official Journal of the European Patent Office under the heading "Notice concerning the payment of fees, expenses and selling prices". Information fees can also be found on the EPO website at www.epo.org/fees.