FEDERAL PATENT COURT

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SHARES 3 Ni 12/24 (EP)
(please specify when answering)
YOUR SIGN 204442NDE-EP-1/SJmab

DATE 19.02.2025

Plaintiff/appellant: **Zhuhai CosMX POWER Co., Ltd.**
Defendant/respondent: **Ningde Amperex Technology Limited**

Summons to attend Oral Proceedings

In the proceedings concerning file number 3 Ni 12/24 (EP), a date has been set for oral proceedings before the Federal Patent Court.

Tuesday, July 15, 2025; 09:30 a.m.

to which you hereby invited.

Please register at **the office building of the Federal Patent Court** in 81549 Munich, Cincinnatistraße 64, 1st floor, booth 1.402 (court service). Please also ask there for the courtroom in which the hearing will take place.

It should be noted that in the absence of one of the parties , negotiations and decisions can also be made without him/her.

If you intend to attend the hearing with more than ten people, please notify the hearing service before the hearing date. The contact details of the hearing service can be found on the letterhead.

The parties should explore the conditions for a possible settlement of the legal dispute in good time before the oral hearing, clarify any lines of retreat, obtain appropriate authorizations or work towards the availability of the decision-makers on the client's side at the time of the hearing. Alternatively, the parties are of the possibility of referring the proceedings to a arbitrator who is not authorized to make decisions (Section 278 (5) ZPO) in order to be able to better consider out-of-court aspects.

Please inform the responsible office at least three days before the hearing of the name, job title and function of the persons who will be attending the hearing.

Qualified preliminary opinion:

On the basis of a preliminary assessment of the factual and legal situation, the Senate draws attention to the following considerations (Section 83 (1) sentence 1 PatG).

The nullity complaint is unlikely to be successful.

1. The Senate intends to combine the present proceedings with case 3 Ni 12/23 (EP), which has already been summoned to July 15, 2025, for joint hearing and decision.

2. The preliminary assessment of the factual and legal situation is based on the classification of characteristics NK3a submitted by the plaintiff.

3. The objective problem underlying the patent in suit is to provide an electrolyte composition which prevents the premature degradation of the electrolyte and thus the deterioration of the battery performance (see NK1a/b, para. [0004], last sentence in conjunction with para. [0006], last sentence). A formulation of the task that deviates from this is not

is necessary, since the patent in suit in Tables 1-1, 1-2 and 2 demonstrates a reduction in the internal DC resistance for the batteries covered by the patent compared to reference batteries and thus shows a solution for the previously defined problem.

4. The skilled person dealing with such a problem, a graduate chemist or Master of Science (Chemistry) in the field of physical chemistry or electrochemistry, who has several years of professional experience in the development and manufacture of batteries, understands the term *"...on the total weight of the electrolyte"*, which is relevant for the assessment of novelty and inventive step, contained in the patent features [1.2] and [1.3] as follows:

It is apparent from paragraph [0112] of the patent in suit that the percentages by weight of the dinitrile component (X), the trinitrile component (Y) and the propyl propionate (Z) mentioned in Tables 1 -1 to 9 for the electrolytes according to the patent are added to the base electrolyte. Accordingly, according to the teaching of the patent in suit, the propyl propionate (PP for short) is not a component of the base electrolyte according to the patent. The values for X, Y and Z given in the granted patent claim 1 are therefore the weight % present in the <u>final</u> electrolyte, so that the dilution by the base electrolyte irrelevant. The granted patent claim 1 also does not distinguish between the base electrolyte mentioned in the embodiment examples and the final electrolyte, but refers in general terms to the *"electrolyte".* The person skilled in the art therefore inevitably understands the term *"electrolyte"* as used in the patent to mean the final electrolyte and thus knows that, in addition to the components mentioned in features [1.1.1 to 1.1.3], it contains other components that originate from the base electrolyte, even if these are only explicitly mentioned in the granted subclaims 7 to 11.

The reference contained in the granted patent claim 12 exclusively to the granted patent claim 11 is an obvious error which should be corrected to a reference to the preceding patent claims 1 to 11. This is supported, firstly, by the fact that the wording *"...according to one of the claims 11"* that the reference must be directed to several patent claims from a purely conceptual point of view and thus cannot only refer to patent claim 11. Secondly, in the original disclosure EP 3 627 606 A1, the corresponding claim 13, directed to an electrochemical device, is also directed to the preceding claims 1 to 12, relating to an electrolyte. This obvious error can also corrected in the auxiliary requests, provided that they are otherwise to be allowable.

5. The asserted ground for invalidity of insufficient disclosure is not applicable. The patent in suit has not only shown by means of examples of embodiments how the electrolytes according to the patent are produced, but also which properties they possess (cf. NK1a/b, para. [0110 to 0114 and 0120] et seq.). In order to be able to check the properties of the electrolytes according to the patent, the skilled person also receives sufficient information on the various test methods in the patent in suit (cf. NK1a/b, para. [0115 to 0119]). It is not necessary that all electrolytes subsumable under the granted patent claim 1 prove to be suitable (see BGH, decision of October 9, 1990, X ZB 13/89, GRUR, 1991, 518 to 521, 2nd Ls. - Polyesterfäden). The uselessness of the electrolyte demonstrated by the plaintiff in NK12 for the electrolyte of patent example S1-9 in Table 1-1 cannot therefore be regarded as evidence of the lack of practicability of the patent teaching. In addition, the patent in suit provides the skilled person with so much information on the structure of the anode, cathode, separator and the manufacture of a lithium-ion battery that the skilled person can realize it using his general skill and knowledge (see NK1a/b, paragraphs [0110 to 0114]).

6. Neither the disclosure of NK6, NK7 or NK10 nor the asserted prior public use of NK4/NK5 are prejudicial to the subject-matter of the patent in suit.

a) Contrary to the plaintiff's view, the subject-matter of the patent in dispute is not anticipated by the reworking of Comparative Example 6 of **NK6** in a manner prejudicial to novelty. NK6 neither implicitly nor explicitly discloses the wt% of PP in the final electrolyte composition, since NK6 does not disclose exact amounts or final concentrations for the solvent composition, but only a relative mass ratio of EC:PP:DEC:PC= 25:25:40:10. Thus, Table 3 of NK6 shows that only the percentages for the additives and the functional compounds as well as the concentration for the electrolyte substance such as $_{LiPF6}$ are given in relation to the final electrolyte to characterize the electrolyte composition As a result, the composition of the organic solvent in NK6 is only determined in general terms by a mass ratio, which makes it impossible to subsequently convert the mass fraction of PP to the total weight of the electrolyte. This is because in order to be able to specify the amount of PP in the unit "% by weight of the final electrolyte composition", the data in NK6

- the required quantity of additive mixture is calculated,
- the density of the reworked electrolyte is measured,
- the volume of the final electrolyte solution is calculated and
- the concentration of $_{LiPF6}$ and LiTFSI can be calculated in mol/l.

However, this data is neither expressly mentioned in NK6, nor does the skilled person automatically read it into the disclosure of NK6. Irrespective of the question of whether the skilled person would have carried out the calculations made by the applicant, the mixing ratio of formula (3) in feature [1.3] according to the patent is not part of the teaching disclosed in NK6, so that the specifications for the necessary conversion of the data mentioned in NK6 are not evident to the skilled person. Consequently, the data provided by the applicant

The measurements and calculations carried out to determine the percentage by weight of PP do not prove that NK6 is harmful to novelty.

b) Rechargeable lithium batteries are also covered by **NK7**. The amount of PP in Example 1 is given here in % by volume. NK7 therefore does not expressly disclose an amount of PP in the unit "weight percent in final electrolyte composition" in accordance with patent feature [1.3]. Furthermore, as was already the case in document NK6, NK7 does not disclose any information that would allow the vol. % mentioned therein to be converted into the patentable unit of feature [1.3]. In view of this, NK7 also does not disclose the patentable feature [1.3] either explicitly or implicitly.

c) The embodiments 1 and 2 shown in **NK10** are not contrary to the patent in suit in terms of novelty, contrary to the plaintiff's argument. These embodiments each contain a non-aqueous organic solvent with the general mixing ratio of EC/PC/EP/PP= 2/1/3/4 vol./vol. In NK10, this is equated to a 100 wt.% mixture to which 2 wt.% of succinonitrile and hexanetricarbonitrile are subsequently added. Consequently, in this case too - as with the aforementioned publications NK6 and NK7 - the volume percentage of PP in the solvent mixture stated in NK10 must converted from 40 % by volume to "% by weight in final electrolyte composition". For the reasons already explained above for NK6 and NK7, the patentable feature [1.3] is therefore not directly and unambiguously disclosed in NK10 either.

A lack of novelty of the NK10, which inevitably results from the reworking of its embodiments 1 and 2, is also ruled out because it contains a first additive as well as a second and third additive, each of which is to be selected from a larger group of substances and the weight % of which, based on the total weight of the

electrolyte can thus be variable, which makes a reworking of embodiments 1 and 2 complex and thus cannot support implicit disclosure.

d) The applicant's argument that there is a material identity between the electrolyte compositions of the comparative example 6 of NK6, the example
1 of NK7 or embodiments 1 and 2 of NK10 and the electrolyte according to the patent, since the previously unknown application of the design rule according to feature [1.3] could not lead to the novelty of the claimed electrolyte and the material identity could be proven by reworking, is wrong. On the one hand, an implicit disclosure by reworking the examples mentioned - as already explained above - cannot be considered. For this, additional data must be determined (total weight of the solvent composition, total weight and total volume of the final electrolyte composition), which are not part of the disclosure content of the respective publication. The person skilled in the art cannot therefore add them through general knowledge. Secondly, formula (3) in feature [1.3] is neither a new design rule for the selection of known substances nor a method for determining properties that have not yet been proven, but a mixing ratio for two specific components of an electrolyte. The case law on assessment rules cited by the plaintiff is therefore not relevant in the present case.

e) The subject-matter of the invention is also new compared to the claimed prior public use by using a battery in the smartphone of the type "SAMSUNG Galaxy S9+" (cf. **NK4 and NK5**).

In patent nullity proceedings, the burden of proof with regard to all facts from which the nullity of the granted patent is to arise lies in principle with the nullity plaintiff (BGH, judgment of November 23, 2023 - X ZR 83/21, GRUR 2024, 374 para. 122 f. - Sorafenib tosylate). To date, the plaintiff has not sufficiently

specifically stated that the invoice of S-KON eKontor24 GmbH dated September 11, 2028 contained in Annex NK4 concerned a smartphone in which a battery was installed that had all the features of patent claim 1 of the patent in suit and that this battery was accessible before the priority date. The defendant has
expressly disputed, among other things, that the battery examined in Annex NK5 was the original battery of the aforementioned smartphone and that the analysis data contained in Annex NK5 corresponded to the data that the corresponding battery actually had at the time of priority. Furthermore, it questioned the conclusiveness of the data contained in the NK5.

In response to a corresponding (substantiated) denial by the defendant in the pleading dated November 22, 2024 (pages 24 to 27), the plaintiff has not yet been able to sufficiently demonstrate that the battery examined was the original battery of the smartphone listed in the NK4. The removal of the net on the battery in the office of the plaintiff's legal representative, as presented by the plaintiff, cannot in itself prove this.

According to the plaintiff, the battery examined was six years old at the time of the analysis (manufactured on July 30, 2018, analyzed on June 7, 2024). According to the annexes WNi5, WNi6, WNi7a, WNi8a, WNi9 submitted by the defendant, the electrochemical composition of a battery can change over the years, which the plaintiff also acknowledges in its statement of January 29, 2025. The plaintiff's argument that this should not be the case in the present case due to the remaining battery capacity - which the defendant also denies - of the battery examined is not convincing in the absence of a demonstration of causality to the defendant's corresponding submission (cf. also Annex WNi6 of the defendant). Against this background, it is currently not sufficiently demonstrated that the analysis data contained in Annex NK5 is meaningful with regard to the composition of the battery examined at the time of priority.

In addition, the analysis data contained in Table 2 of the NK5 cannot show the composition of the investigated battery in a sufficiently concrete manner because they are not comprehensible in the following points and are therefore unclear:

- Sum of components of 90.2 % by weight instead of 100 % by weight;
- a temperature program from 30°C to 175°C;
- the mathematical correctness of the calculation formula;
- the superposition of peaks in the spectrum of Fig. 1;
- Missing data from GC-MS measurement for quantity determination, see WNi10.

The documents submitted therefore do not meet the stringent requirements for evidence of obvious prior use.

f) Contrary to the plaintiff's view, the patent in suit can effectively claim the priority of September 21, 2018 from application CN201811108529.X, so that the publication of the priority application **NK1f** does not conflict with the subject matter of the patent in suit in a manner prejudicial to novelty. Firstly, the term *"electrolyte"* used in the granted patent claim 1 refers exclusively to an electrolyte solution. Secondly, the invention in both the patent in suit (= subsequent application) and the priority document NK1c/d/e (= previous application) is that the electrolyte comprises a dinitrile compound, a trinitrile compound and propyl propionate and that the three components fulfill the conditions of formulae (1), (2) and (3). Accordingly, the previous and subsequent applications describe the same invention. As a result, the identical electrolyte compositions in the previous and subsequent application must also lead to electrolytes with an identical aggregate state, especially since the electrolyte is also referred to as an electrolyte solution in the patent in suit (see NK1a, para. [0007], line 41). On the other hand, the fact that the granted patent claim 1 with the generally mentioned
"electrolyte" also comprises a solid (polymer) electrolyte, the fact that the electrolyte of the patent-compliant embodiments always a

solvent component and is introduced via an opening for liquid injection (see NK1a, para. [0114]).

7. The subject-matter of the patent in suit is also based on an inventive step. This is because the prior art does not contain any that an improvement of the electrolyte composition depends on a ratio of the weight percentages of the trinitrile compound (Y) to PP (Z) in relation to the total weight of the electrolyte 0.009 to 0.33, thus complying with formula (3) according to the patent.

a) A possible starting point for the assessment of inventive step is the publication **NK7.**

Contrary to the plaintiff's view, the existence of an inventive step does not have to be demonstrated by an improvement over the prior art. Rather, it is sufficient for the patent in suit to show, e.g. on the basis of the data in Tables 1-1, 1-2 and 2, that the claimed electrolytes are an advantageous alternative to electrolytes with a different composition in terms of the DC value (DC internal resistance) (see NK1a/b, paras. [0120 to 0123, 0125 and 0126]). Furthermore, the electrolytes according to the patent do not have to be better than the electrolytes in NK7, especially since the respective electrolytes fulfill different tasks. In NK7, the electrolytes are intended to increase the thermal stability of the battery, whereas in the patent in suit they are intended to reduce an increase in the internal DC resistance after numerous charging and discharging cycles. It is therefore sufficient that the electrolytes according to the patent enrich the prior art in a non-obvious way. The fact that not all electrolytes covered by the granted patent claim 1 may exhibit the improvement specified in the patent in suit to the same extent is therefore irrelevant. Against this background, the detailed analysis of the plaintiff's patent examples is not relevant to the decision. This is because a comparison of the electrolytes according to the patent with the electrolytes of NK7 confirms that the electrolytes according to the patent, knowing

of the NK7 are not obvious to the skilled person. The electrolyte of the NK7 contains inter alia an organic solvent with a C3-C5 $_{alkyl}$ propionate, a lithium salt and a trinitrile compound of formula 1 (cf. NK7, Abstract). Accordingly, the presence of PP is not absolutely necessary for the teaching of NK7, since butyl ($_{C4}$) or pentyl ($_{C5}$) propionate can also be used instead of propyl ($_{C3}$) propionate (see NK7, claims 1 and 3 in conjunction with paragraph [0040]). In examples 1 and 2 of NK7, PP is used and, in addition to the trinitrile compound HTCN, the dintrile compound succinonitrile is also used. However, there is no information in NK7 as to the ratio of these three components to each other or the ratio of the trinitrile compound to propyl propionate. The fact that the patent-compliant ratio of trinitrile compound to PP (= in SP Y/Z) is not given any significance in NK7 also results from the fact that the components of the solvent, such as PP, are stated in % by volume, while additives, such as di- and trinitrile compounds, are stated in % by weight. Consequently, the ratios of the additives in examples 1 and 2 can be derived from NK7 as follows:

Formula (1): X + Y = 3 [according to SP = 2 to 11 % by
weight] Formula (2): X/Y= 0.5 [according to SP= 0.1 to 8],

whereby, knowing this, it is still not obvious to the person skilled in the art what the ranges given in formulae (1) and (2) of the patent features [1.2.1] and [1.2.2] are. Moreover, the presence of a dinitrile compound in addition to a trinitrile compound in the electrolyte of the NK7 plays a rather subordinate role. This is because the simultaneous presence of a dinitrile compound in the electrolyte of NK7 is only in subclaim 6. NK7 therefore contains neither a suggestion for compliance with formulae (1) and (2) in accordance with the patent, nor with formula (3) in accordance with the patent.

b) Even a combination of **NK7 and NK8** does not suggest the patented objects. In NK8, carboxylic acid esters are considered suitable for reducing the viscosity of the electrolyte and at the same time increasing its

increase electrical conductivity. Propyl propionate is mentioned in NK8 as a possible carboxylic acid ester for this purpose. However, it is not mentioned among the preferred carboxylic acid esters. Knowing this, propyl propionate is not a first choice among carboxylic acid esters for the person skilled in the art when it comes to improving electrolytes for batteries. NK8 also provides that the electrolytes described therein contain a (mono)nitrile compound of the formula R^3-CN (see NK8a, claims 1 and 4). A trintrile compound is therefore not considered necessary in NK8 to improve the electrolyte. It is therefore not apparent what reason the skilled person should have to apply the concentration for carboxylic acid esters of preferably 5 to 30% by weight stated in NK8 specifically to PP and to transfer it to the electrolyte solutions of NK7, in which trinitrile compounds are used instead of the (mono)nitrile compounds of NK8. Furthermore, when NK8 and NK7 are considered together, there is no indication that the patented formula (3) should be observed. Further information which, in the opinion of the plaintiff, would result for the skilled person from a combination of NK7 and NK8 is, on the other hand, based on an inadmissible retrospective view.

c) The plaintiff's submission, according to which the aforementioned argumentation regarding NK7 and NK8 also applies to a combination of NK6 (example 25) and NK8, also fails due to an inadmissible retrospective view.

d) Consideration of the publication **NK9**, which was also referred to by the applicant in the assessment of the inventive step, does not lead to a different preliminary assessment. This is because, as in NK8, electrolytes with the (mono-)nitrile compound acetonitrile, possibly in conjunction with a dinitrile compound, are also regarded as preferred in NK9 (see NK9, patent claims 1 and 27). Trinitriles therefore play no role in the teaching of NK9. In addition, the electrolyte according to NK9 may also contain a so-called non-nitrile additive. In paragraph [0040], a long list of non-nitrile additives includes n-propyl propionate and iso-propyl propionate. In the examples of NK9, however, according to the information in Table 2, no PP

is used. From this it follows from a technical point of view that the presence of trinitriles in an electrolyte for batteries according to the teaching of NK9 is not important, PP is not one of the preferred non-nitrile additives and therefore the ratio of trinitrile compound to PP is not important either. Thus, the skilled person will not find any indications in NK9 that would suggest electrolytes with the patent-compliant feature [1.3]. Even a combination of NK9 with NK7 and/or NK8 does not provide any indication of feature [1.3], as the necessity of trinitriles in the electrolytes appears questionable in the light of these publications and the patent-compliant Y/Z ratio is not taken into account in any of the publications.

e) The same applies to the plaintiff's statements in connection with embodiments 1 and 2 shown in publication **NK10**, whose electrolytes contain, inter alia, succinonitrile (SN) as dinitrile, hexantricarbonitrile (HTCN) as trinitrile and PP. Unlike in claim 1 of the patent in suit, however, the 2% by weight of SN and HTCN do not refer to the final electrolyte, but to the solvent mixture with a concentration of 1.15 M $_{LiPF6}$. The 40 vol.
% of PP are based on the volume of the solvent and not the final electrolyte (see NK10, paragraphs [171 and 176]). It is not apparent why the skilled person should convert these figures to the final electrolyte and take into account the conditions for an improved electrolyte mentioned in formulae (1), (2) and (3) according to the patent. They cannot be derived by the skilled person from the NK10 in conjunction with the NK9 in an obvious manner.

f) The applicant's comments on example 17 of **NK11** also do not justify a different preliminary view. In this example, the electrolyte protected against overcharging contains tetranitrile BPN and trinitrile PTN as nitrile-containing additive B, each at 1% by weight. What the skilled person should know from example
17 to dispense with the tetranitrile used therein and replace it with a dintrile is just as little apparent as a reason for partially replacing the solvent from EC:PC:DMC= 1:1:2 used in Example 17 with PP (cf. NK11, para. [0034]). The

The general mention of PP in NK11 as a possible organic solvent is not sufficient for this. Moreover, the citations cited by the plaintiff do not suggest that the tetranitrile in example 17 has been replaced by a dintrile. Thus, the last sentence in paragraph [0053] of NK11 merely indicates, on the basis of examples 16 and 17, that different additives A and B can be combined with each other in order obtain electrolytes with permanent protection against overcharging. However, a comparison of examples 16 and 17 merely makes it clear to the skilled person that the tetranitrile compound in example 17 is dispensable, since the electrolyte of example 16, which contains only a trinitrile compound as additive B, has almost identical properties to the electrolyte of example 17. Simultaneous consideration of the information in paragraph [0022] of NK11 also does not replacing the tetranitrile in example 17 with a dinitrile. This is because from the last sentence in paragraph [0022], the skilled person merely understands that additive B should contain at least one nitrile from the group cyanomethoxy acetonitrile (dinitrile), 1,3,6- hexanetrinitrile (trinitrile) and 3,3-bis(cyanomethyl) adiponitrile (tetranitrile). However, there is no indication therein that would lead the skilled person to replace the tetranitrile in Example 17 of NK11 with the dintrile cyanomethoxy acetonitrile, but at best to replace the 3,3-bis(cyanomethyl) glutaronitrile (BPN) used therein as tetranitrile with the 3,3-bis(cyanomethyl) adiponitrile mentioned in paragraph [0022]. Consequently, for the reasons already mentioned above in connection with document NK9, a synopsis of NK11 and NK9 does not provide any indications or suggestions that would point in the direction of the patentable feature [1.3].

8. In this situation, the **auxiliary requests** 1 to 35 of November 22, 2024 are not relevant according to the current state of facts and disputes**.** Nevertheless, the following preliminary considerations are with regard to these:

a) If the formulae (1), (2) and (3) according to the patent are to the person skilled in the art and consequently the use of dinitrile (X) and trinitrile compounds (Y) as well as propyl propionate (Z) in a battery electrolyte in the corresponding weight percentages or weight ratios can be assumed to be known, then

neither the specification of the variables X, Y, and Z nor the list of the numerous specific dintiril compounds in claim 1 of **auxiliary request 1** establish an inventive step. Especially since the further specification of the weight % for dintrile and trinitrile compounds as well as propyl propionate with 0.01 to 10 weight % (for X and Y) and 5 to 50 weight % (for Z) is still so broad that the skilled person does not need any inventive step to determine them.

b) Contrary to the opinion of the plaintiff, patent claim 1 of **auxiliary request 2** contains neither an inadmissible extension nor an extension of the scope of protection. With regard to the inventive step, the comments on auxiliary request 1 apply accordingly.

aa) The fact that the granted patent claim 1 is not further specified with regard to the type and number of dinitrile compounds to be used speaks against an extension of the scope of protection. These are only defined in more detail in the granted patent claim 3 and are thus freely selectable within the scope of the granted patent claim 1.

The plaintiff's view that patent claim 1 of **auxiliary requests 2 to 17** and **20 to 35** could contain other dinitriles and trinitriles due to its wording "An electrolyte comprising...", so that the conditions of formulae (1) and (2) are not fulfilled therein and the respective patent claim 1 thus goes beyond the scope of protection of the granted version, does not apply. This is because the formulation "An electrolyte comprising..." permits other material components in an electrolyte according to the patent apart from the compounds X, Y and Z mentioned in the granted patent claim 1 (see patent claims 7 to 11), but does not permit any other nitriles apart from the nitrile compounds defined by the parameters X and Y.

bb) In patent claim 1 of **auxiliary request 2**, the trinitrile compounds are characterized by of the formulae (6) and (7) , where of in the granted

Patent claim 4 or in the original claim 5 used term "comprises" has been replaced by "is". This is merely a linguistic correction and not an inadmissible extension, as "comprises" in its meaning "consisting of"/"containing"/"comprising" only appears to make sense in connection with compositions containing various trinitrile compounds, but not when selecting a single trinitrile compound from a collective of trinitrile compounds as in claim 1 of auxiliary request 2. This also explains the omission of the expression "or a combination thereof". This **applies mutatis mutandis** to auxiliary requests **3 to 8 and auxiliary requests 20 to 26**.

The argument that the excluded butanedinitrile (A_1) was regularly used in the original examples of Tables 1-1 and 2 to 9 cannot support the existence of an inadmissible extension. This is because Table 1-2 also identifies other dinitrile compounds as advantageous in the patent sense. This makes it clear that the originally disclosed teaching does not regard the use of butanedinitrile as absolutely necessary, especially since the specific compound butanedinitrile only mentioned in the original documents in sub-claim 4 as one of approx. 40 compounds. Patent claim 1 according to auxiliary request 2 also does not mention any combination of dintrile compounds which goes beyond the original disclosure, since the expression "and any combination thereof" is also found in the same wording in the original claim 4.

cc) With regard to the dinitrile and trinitrile compounds specified in claim 1 of auxiliary request 2, the statements relating to the inventive step of auxiliary request 1 apply mutatis mutandis to auxiliary request 2. Moreover, electrolyte solutions which do not contain butanedinitrile are known to the skilled person from the prior art (see NK6a, para. [0035], embodiments 23), so that the omission of butanedinitrile/succinonitrile (SN) as a dinitrile component does not an inventive step. Furthermore, the combination of ADN and DENE is routinely used in NK6 and is thus also within the scope of the invention.

Field of vision of the skilled person (cf. NK6a, para. [0034 and 0035], third column in each case).

c) The **above statements**, which speak against an **extension of the scope of protection or an impermissible extension**, also **apply** mutatis mutandis to the following **auxiliary requests 3 to 8, 10, 11, 14 to 16**
as well as **auxiliary requests 20 to 26, 28, 29 and 32 to 34.**

d) Auxiliary claims 3 to 8 and **21 to 26** are **not inadmissibly** broadened because of the combination of specific dintrile compounds with a compound containing a sulphur-oxygen double bond provided therein. This is because the original claim 11 relates back to the preceding claims 1 to 10 and consequently includes a plurality of electrolytes which are can contain, among other things, numerous dinitrile compounds individually or in combination, fluorinated cyclic carbonate esters and a compound with a sulphur-oxygen double bond.

A restriction of the design rules in the respective patent claim 1 of **auxiliary requests 6 to 17** and **24 to 29 does not** lead to an **inadmissible extension,** since there is support for this in sections [0030] and [0032]. The design rules are generally stated therein can therefore be combined with the material components of the originally disclosed electrolytes.

e) The additional features in the respective patent claim 1 of **auxiliary requests 3, 4** and **5 do not** constitute **an inventive step**, since 1,3-propanesultone (PS) and fluoroethylene carbonate (FEC) are conventional additives in electrolytes for lithium secondary batteries (see NK6a, para. [0015] in conjunction with Table 3 and PA7).

f) With regard to the adjustment of the lower and upper limits in formulae (1), (2) and (3) in claim 1 of **auxiliary request 6**, it is currently not apparent why this should be based on an inventive step.

g) In **auxiliary request 7**, not only are the upper and lower limits in formulae (1), (2) and (3) in auxiliary request 6 adapted in claim 1 compared with auxiliary request 5, but the quantities for the variables X, Y and Z are also restricted. These limitations provided for in **auxiliary requests 7 to 17** and **25 to 35** are supported in general form in the original paragraphs [0033, 0034 and 0035] and therefore **do not constitute an inadmissible extension**.

However, the intended limitations can be determined on the basis of routine tests and therefore without any inventive intervention.

h) In addition, a proportion by weight of 1,3-propanesultone of 0.5 to 3% by weight was in claim 1 of **auxiliary request 8**. As already explained above with regard to auxiliary request 5, the skilled person knows propane sultone as a common additive in electrolytes for batteries, so that the determination of a suitable amount for this component also does not go beyond the general skill and knowledge of the skilled person.

i) In patent claim 1 of **auxiliary request 9**, compared to the main request

- the upper and lower limits of formulas (1), (2) and (3) and the range of values for the variables X, Y and Z were adjusted in accordance with auxiliary request 7,
- the dintril compounds as listed in auxiliary request 2,
- named the trinitrile compounds in detail and
- 1,3-propanesultone with 0.5 to 3 % by weight.

This is merely a mosaic-like compilation of features from the preceding auxiliary requests which even taken together, cannot establish an inventive step.

j) Compared to auxiliary request 9, patent claim 1 of **auxiliary request 10**

- dispenses with the adverb "about" in formula (3),
- a further restriction of the possible di- and trinitrile compounds and
- FEC is included as a further additive in a concentration of 0.5 to 8% by weight.

Since the individual components of patent claim 1 are still known from the prior art in this too, no inventive step can be seen in this combination either.

k) Compared to auxiliary request 10, in claim 1 of **auxiliary request 11**
The following changes have been made:

- the trinitrile component was limited to 1,3,6-hexantricarbonitrile and
- the range in formula (1) was set at 3 to 5 % by weight.

If the conditions of formula (1) are to be assumed as known, it is not apparent why the upper and lower limits determined for this purpose should be based on an inventive step. Moreover, HTCN is a trinitrile compound frequently used in battery electrolytes, which is why its use in an electrolyte according to the patent cannot constitute an inventive step either (see NK7, Table 1).

l) Patent claim 1 of **auxiliary request 12** indicates

- formulas (1) and (2) the value ranges of auxiliary request 9,
- Formula (3) is in the issued version,
- the value ranges for the variables X, Y, and Z are specified therein as 0.01 -10% by weight for X, 0.5 to 3% by weight for Y and 30 to 40% by weight for Z, and
- the selection of di- and trinitrile compounds corresponds to that of auxiliary request 9.

As in the previous auxiliary requests, the changes here also only consist of variations of the patent-compliant parameters X, Y and Z, which does not lead to a different assessment of the facts.

m) In addition to patent claim 1 of auxiliary request 12, patent claim 1 of **auxiliary request 13** also contains 0.5 to 3% by weight of 1,3-propanesultone. For the reasons stated above, this cannot be regarded as an inventive step.

n) The following changes were made to **auxiliary request 14** compared to the main request:

- Formulas (1), (2) and (3) as well as the value ranges for the variables X, Y and Z correspond to those in auxiliary request 10, whereby the value range for Z is specified as 30 to 40 % by weight,
- the selection of dinitrile compounds corresponds to that in auxiliary request 10 and
- As in auxiliary request 11, only HTCN (1,3,6- hexantricarbonitrile) is specified as the trintrile compound.

For the known reasons, no inventive step can be seen in this combination of features either.

o) Based on auxiliary request 2, formulas (1), (2) and (3) as well as the variables X, Y and Z in **auxiliary request 15** were changed as follows:

- Formula (1) comprises 2 to 8 % by weight
- Formula (2) covers the range from 0.1 to 6
- Formula (3) covers the range from 0.02 to 0.1
- X corresponds to 0.5 to 6 % by weight
- Y corresponds to 0.5 to 3 % by weight and
- Z corresponds to 20 to 40 % by weight and
- The trinitrile compounds were limited to the three compounds as provided for in auxiliary request 10.

There are currently no apparent reasons why this combination of features is associated with an inventive step in the light of the knowledge described above.

p) In comparison to patent claim 1 of auxiliary request 15, patent claim 1 of **auxiliary request 16**, only the proportion by weight of component Z (= propyl propionate) is set at 30 to 40% by weight, which is also not suitable for establishing an inventive step.

q) The only difference to patent claim 1 of auxiliary request 16 in **auxiliary request 17** is that the dintrile compound was limited to DENE, optionally in combination with ADN and/or DCB. Arguments that this limitation is due to an inventive step in the disclosed prior art are currently not apparent.

r) **Auxiliary requests 18 to 35** correspond to the main request and auxiliary requests 1 to 17 respectively, whereby in auxiliary requests 18 to 35 in claim 1, only the term *"electrolyte"* been replaced by the term *"electrolyte solution"*. Apparently, the defendant is trying counter a possible invalidity of the priority claimed by the patent in suit. However, this should not be necessary for the reasons mentioned above.

9. A copy of this notice will forwarded to the infringement court (Section 83 (1) sentence 3 PatG).

The parties shall be given the opportunity to

of one month

to this reference by relevant applications or addition of their

and also to make a final statement in all other respects (Section 83 (2) sentence 1 PatG).

The respective other party shall be granted a further period of time to reply of

one month

from receipt of any statement from the other party.

The Senate may reject a party's means of attack and defense or an amendment to the action or a defense of the defendant with an amended version of the patent, which are only submitted after the expiry of a time limit set for this purpose pursuant to Section 83 (2) PatG, and decide without further investigation if consideration of the new submission would necessitate an adjournment of the date already set for the oral hearing and the party concerned does not sufficiently excuse the delay (Section 83 (4) PatG).

Schramm

Presiding Judge at the Federal Patent Court

By court order

Office of the 3rd Senate

Köglsperger
Judicial inspector eEB