

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today  
(1) was not written for publication in a law journal and  
(2) is not binding precedent of the Board.

Paper No. 32

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte GERHARD HAAKE,  
GUNTER GEILER and  
FRANK HAUPT

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Appeal No. 1996-2566  
Application 08/107,656

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HEARD: FEBRUARY 8, 2000

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Before JOHN D. SMITH, OWENS and LIEBERMAN, Administrative  
Patent Judges.

JOHN D. SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal pursuant to 35 U.S.C. § 134 from the  
final rejection of claims 12-21.

The subject matter on appeal is directed to a process of  
preparing a solution of basic sulfate-containing polyaluminum

chloride which allegedly possesses improved flocculation properties. See the specification at page 2, lines 13-20 and pages 9 and 10. Claim 12 is representative and is reproduced below:

12. A process of preparing a solution of basic sulfate-containing polyaluminum chloride, said process comprising the steps of:
- a. digesting an aluminum-containing substance with hydrochloric acid to form a resulting solution and an insoluble residue;
  - a) filtering said resulting solution formed in step a) and to form a solids-free solution;
  - in b. concentrating said solids-free solution formed in step b) by evaporation to form a concentrated solution having an  $\text{AlCl}_3$  content of about 30 percent by weight;
  - crystallization; d. recovering  $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$  from said concentrated solution formed in step c) by
  - step e. thermally decomposing said  $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$  formed in d) to form a solid basic aluminum chloride by heating at temperature from 150 to 200°C so that said solid basic aluminum chloride contains Al and OH in a molar ratio of OH/Al of from 1.35:1 to 2.25:1;
  - in f. feeding the solid basic aluminum chloride formed in step e) into an aqueous sulfuric acid solution and dissolving said solid basic aluminum

Appeal No. 1996-2566  
Application No. 08/107,656

chloride therein; and

Appeal No. 1996-2566  
Application No. 08/107,656

at g. not prior to said feeding step f), heat-treating  
temperatures of 40°C to 70°C for 1 to 3 hours  
to form a solution of basic sulfate-containing  
polyaluminum chloride having a sulfate  
content of 1 to 6 percent by weight and an aluminum  
concentration of 3 to 10 percent by weight,  
wherein said molar ratio of OH/Al in said  
solution of said basic sulfate-containing  
polyaluminum chloride is from 1.05:1 to  
1.95:1.

The references of record relied upon by the examiner are:

Schmerling 20, 1945	2,369,691	Feb.
Becher 20, 1974 (published United Kingdom Pat. Application)	1,347,413	Feb.
Sinha 28, 1981	4,264,569	Apr.
Davis 24, 1985	4,560,541	Dec.

The appealed claims stand rejected under 35 U.S.C. § 112,  
first paragraph, "written description requirement." The  
appealed claims also stand rejected under 35 U.S.C. § 112,  
second paragraph. Appealed claims 12, 13, and 18-21 stand  
rejected under 35 U.S.C. § 103 as unpatentable over Becher in  
view of Davis and Sinha. Appealed claims 15-17 stand rejected  
under the same section of the statute as unpatentable over  
Becher in view of Davis and Sinha further in view of  
Schmerling.

Appeal No. 1996-2566  
Application No. 08/107,656

THE 35 U.S.C. § 112 "DESCRIPTION REQUIREMENT" REJECTION

The claimed process for producing a solution of a basic sulfate-containing polyaluminum chloride is defined by a sequence of process steps including, inter alia, the formation and feeding of a solid basic aluminum chloride into an aqueous sulfuric solution and dissolving said solid basic aluminum chloride therein, and "not prior to said feeding step," heat-treating at temperatures of 40EC to 70EC for 1 to 3 hours to form the desired product. See steps e and f of appealed claim 12. We understand the examiner's position to be that the claim language "not prior to said feeding step" constitutes "new matter" and thus this later claimed subject matter does not enjoy written descriptive support in appellants' application as originally filed as required by the first paragraph of 35 U.S.C. § 112.

With reference to claimed steps e and f, the specification indicates at page 3, lines 4-8 that

[t]he solid basic aluminum chloride is charged into the aqueous sulfuric acid and is dissolved therein with formation of  $\text{Al}(\text{OH})_x\text{Cl}_y(\text{SO}_4)_z$  and the basic solution of aluminum chloride is subsequently heat-treated at 40 to 70E C for 1 to 3 hours (emphasis added).

Appeal No. 1996-2566  
Application No. 08/107,656

Further, the specification indicates at page 3, line 25 to page 4, line 3 that

[T]he  $\text{Al}(\text{OH})_x\text{Cl}_y(\text{SO}_4)_z$  formed as the basic aluminum chloride dissolved in aqueous sulfuric acid is present not only as monomers but also as oligomers but the desired degree of polymerization is not achieved until the heat treatment (emphasis added).

The examiner argues that based on the originally filed disclosures in appellants' specification, the claimed heat treatment step g is described only as a separate step which takes place only subsequent to the feeding(dissolution) step f, not a step which can take place during the feeding step. On the other hand, appellants argue that the claim language "not prior to said feeding step" is intended to cover the embodiments of heat treating "during and/or after the feeding step." See the brief at page 12. To support their argument, appellants assert that one of ordinary skill in the art would understand that heat is liberated during the step of feeding the basic aluminum chloride into the sulfuric acid solution (because of the neutralization reaction). Thus, according to

Appeal No. 1996-2566  
Application No. 08/107,656

appellants, the feeding step f of appealed claim 12 would be recognized as one which generates heat.

We cannot subscribe to appellants arguments with respect to this issue. First, appellants have proffered no objective evidence in support of their contention that heat is inherently liberated during their feeding step. Secondly and importantly, even if heat is given off as the solid basic aluminum chloride is fed into the aqueous sulfuric acid solution as a result of a neutralization reaction, there is no description in appellants' originally filed specification that their feeding step should be carried out for 1 to 3 hours at a temperature maintained in the range of 40EC to 70EC to effect the desired degree of polymerization to form the claimed polyaluminum chloride solution. This is a concept not described by appellants' application. While the "written description requirement" of the first paragraph of 35 U.S.C. § 112 may be satisfied if there is support in the original disclosure for the concept of what is later claimed, In re Anderson, 471 F.2d 1237, 1244, 176 USPQ 331, 336 (CCPA 1973), amendatory claim language which introduces new concepts violates the "written description requirement" of

Appeal No. 1996-2566  
Application No. 08/107,656

35 U.S.C. § 112, first paragraph. Ex parte Grasselli, 231 USPQ 393, 394, (Bd. App. 1983) aff'd mem., 738 F.2d 453 (Fed. Cir. 1984). Accordingly, we sustain the examiner's "written description requirement" 35 U.S.C. § 112 rejection of the appealed claims.

THE REJECTIONS UNDER THE SECOND PARAGRAPH OF 35 U.S.C. § 112

The appealed claims also stand rejected under the second paragraph of 35 U.S.C. § 112 for indefiniteness. The examiner argues that step e of appealed process claim 12, which requires the thermal decomposition of the aluminum chloride hexahydrate, violates the "proviso" that the heat treating step g must be carried out "not prior to the feeding step f." Thus, the examiner believes that the claim is internally inconsistent and thus indefinite. Apparently, the examiner considers the thermal decomposition step e as somehow equivalent to appellants' heat-treating step g. As we have observed above, however, heat-treating step g is specifically defined with respect to both temperature and time ranges to form a specifically defined desired product while step e involves thermal

Appeal No. 1996-2566  
Application No. 08/107,656

decomposition of a different product at a different temperature for a different purpose. Thus it is not apparent how the "proviso" is violated by the step e thermal decomposition "heat-treatment."

With respect to appealed dependent claim 14 which defines the  $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$  as having a residual moisture content of 3 to 10 weight percent, we agree with appellants that one of ordinary skill in this art would understand that the residual moisture content is the content of water or moisture physically adsorbed or accompanying the crystal product,  $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$ , in addition to the water of hydration of the hexahydrate. See the brief at page 13. We therefore see no indefiniteness in this claim.

The examiner also indicates that appealed dependent claims 19 and 21 run afoul of the second paragraph of 35 U.S.C.

§ 112 because these claims recite the plural form of the word "claim" (i.e., "according to claims 12") which is said to be "ungrammitical." See the answer at page 3. Appellants concede that this rejection is appropriate since the "misspelling" involves a typographical error. Therefore, we

Appeal No. 1996-2566  
Application No. 08/107,656

sustain this rejection of claims 19 and 21.

In summary, with the exception of the grounds of rejection involving appealed claims 19 and 21, we do not sustain any of the examiner's stated rejections of the appealed claims under the second paragraph of 35 U.S.C. § 112.

THE REJECTIONS FOR OBVIOUSNESS

With respect to the examiner's stated rejections of the appealed claims under 35 U.S.C. § 103, appellants argue at page 16 of the brief that

Critical limitations of the method of claim 12 which are not present in any of the methods described the cited prior art references are present in steps f) and g) of claim 12. In these steps a solution which is formed by dissolving solid basic aluminum chloride in aqueous sulfuric acid is heat-treated for 1 to 3 hours after the dissolving at temperatures of 40 to 70E C.

Appeal No. 1996-2566  
Application No. 08/107,656

To the extent that the Becher process is otherwise comparable to the herein claimed process<sup>1</sup>, appellants correctly observe that the heat-treating conditions required for the claimed process are much milder than Becher's, wherein temperatures from 130 to 200E C at comparatively high pressures are utilized. The examiner's assertion (answer, page 6) that Becher teaches "subsequent heating" simply does not come to grips with appellants' arguments and the requirements of the appealed claims. Thus, the examiner has failed to meet his burden of providing an adequate factual basis to support a legal conclusion that the subject matter "as a whole" defined by the appealed claims would have been obvious at the time appellants' invention was made. 35 U.S.C. § 103. In light of the above and further in view of the arguments in appellants' brief, we cannot sustain the examiner's stated rejections of the appealed claims for obviousness.

Because we have sustained the examiner's rejections of each of the appealed claims under the written description

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<sup>1</sup> Numerous other differences exist between the process defined by appealed claim 12 and Becher's prior art process.

Appeal No. 1996-2566  
Application No. 08/107,656

requirement of 35 U.S.C. § 112, first paragraph, and the rejections of appealed claims 19 and 21 under the second paragraph of 35 U.S.C. § 112, the decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

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JOHN D. SMITH	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
TERRY J. OWENS	)	)
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
	)	
PAUL LIEBERMAN	)	)
Administrative Patent Judge	)	

JDS:hh

Appeal No. 1996-2566  
Application No. 08/107,656

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