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D E C I S I O N
of 22 August 1997

Case Number: T 0431/94 - 3.4.1

Application Number: 87907859.0

Publication Number: 0289582

IPC: H01C 7/10

Language of the proceedings: EN

Title of invention:
Method for preparing a metal oxide varistor precursor powder

Patentee:
Raychem Corporation

Opponent:
Asea Brown Boveri AG

Headword:
Metal oxide varistor/RAYCHEM CORPORATION

Relevant legal provisions:
EPC Art. 123(3)

Keyword:
"Amendments extending the protection conferred (yes)"

Decisions cited:
-

Catchword:
-



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Boards of Appeal

Chambres de recours

Case Number: T 0431/94 - 3.4.1

D E C I S I O N
of the Technical Board of Appeal 3.4.1
of 22 August 1997

Appellant:
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 24 March 1994
revoking European patent No. 0 289 582 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: G. D. Paterson
Members: R. K. Shukla
H. J. Reich

Summary of Facts and Submissions

- I. European patent No. 0 289 582 relating to a method for preparing a metal oxide varistor precursor powder was granted with claim 1 having the following wording:

"A process for preparing a metal oxide varistor precursor powder comprising at least one primary metal oxide and one or more additive metal oxides, which comprises the steps:

- (a) forming an aqueous solution comprising up to about 25 mole % (based on the additive metal oxides plus the primary metal oxides, of at least one soluble precursor of an additive metal oxide;
- (b) mixing in said aqueous solution up to about 75 mole % of at least one primary metal oxide powder having an average particle size up to about 5 μm (microns) to form a suspension or slurry of the primary metal oxide powder in said solution;
- (c) adding to the suspension or slurry a sufficient amount of a precipitation reagent to cause one or more of the dissolved additive metal oxide precursors to convert to an oxide or hydrous oxide and precipitate from said solution in the presence of said primary metal oxide powder in the form of an oxide or hydrous oxide;
- (d) removing water and by-product salts from the suspension of primary metal oxide powder and precipitate of additive metal oxide or hydrous oxide; and
- (e) drying the powder and precipitate and forming a metal oxide varistor precursor powder."

The above patent was revoked pursuant to Article 102(1) EPC by a decision of the Opposition Division on the ground that the patent as amended during the opposition proceedings did not comply with the requirement of

inventive step according to Article 56 EPC having regard to the following prior art documents cited by the Opponent:

D1: English translation of JP-A- 56 101711 and

D2: US-A-4 318 995.

II. The patent Proprietor lodged an appeal against the above decision and requested that the impugned decision be set aside and a patent be granted on the basis of new claims 1 to 7 filed with the statement of the grounds of appeal on 28 July 1994. In the event that the Board intended to dismiss the appeal, the patent Proprietor requested that oral proceedings be appointed. In the statement of the grounds of appeal, it was contended that new claim 1 which was restricted to a process in which the precipitation agent is added to the slurry of the primary metal oxide powder prior to the combination of the precipitation agent with the aqueous solution, was not rendered obvious by document D1 or D2.

III. New claim 1 filed with the grounds of appeal has the following wording:

"A process for preparing a metal oxide varistor precursor powder comprising at least one primary metal oxide and one or more additive metal oxides by combining

- (1) an aqueous solution comprising up to about 25 mole %, based on the additive metal oxides plus the primary metal oxides, of at least one soluble precursor of an additive metal oxide,

- (2) at least about 75 mole % of at least primary metal oxide powder in a suspension or slurry form and having an average particle size up to about 5 microns, and
- (3) a sufficient amount of a precipitation reagent to cause one or more of the dissolved additive metal oxide precursors to convert to an oxide or hydrous oxide and precipitate from solution in presence the primary metal oxide powder in the form of an oxide or hydrous oxide;

removing water and by-product salts from the suspension or slurry of primary metal oxide powder and precipitate of additive metal oxide or hydrous oxide;
and drying the powder and precipitate and forming a metal oxide varistor precursor powder;

characterised in that

the conversion of one or more dissolved additive metal oxide precursors to the oxide or hydrous oxide and precipitation thereof is effected in the presence of a dispersant so as to mix and disperse the primary metal oxide;

and in that the precipitation reagent is added to the slurry of the primary metal oxide prior to the combination of the precipitation reagent with aqueous solution."

New claims 2 to 7 are dependent on claim 1.

IV. The Opponent (Respondent) in its response, dated 5 December 1994 requested that the appeal be dismissed, since claim 1 as amended contravened the requirement of Article 123(3) EPC. In particular, it was contended by the Opponent that the amended claim does not specify the process step (b) (of "mixing of the primary metal

oxide powder in the aqueous solution") nor the process step (c) (of "adding a precipitation reagent to the suspension or slurry of the primary metal oxide in an aqueous solution") of claim 1 as granted, and thus claim 1 has been amended in such a way so as to extend the protection conferred.

The Opponent also requested as an auxiliary request that the case should be remitted to the first instance for further prosecution, since amended claim 1 contained new features which did not form part of the subject-matter of the claims forming the basis of the European search report according to Article 92(1) EPC. There was no request for oral proceedings from the Opponent.

- V. In response to a Telefax dated 20 March 1997 from the Board informing the parties that the Board intended to summon the parties to oral proceedings, the patent Proprietor withdrew its request for oral proceedings.
- VI. In its communication dated 3 April 1997, the Board informed the parties of its provisional view that amended claim 1 forming the basis of the patent Proprietor's request for the grant of a patent appeared to contravene Article 123(3) EPC, and that the Opponent's auxiliary request for remittal to the first instance (mentioned in paragraph IV above) did not appear to be justified.
- VII. The patent Proprietor did not file any counter arguments either against the contention by the Opponent that the amended claim 1 does not comply with the requirement of Article 123(3) EPC (see paragraph IV

above), or in response to the above mentioned communication from the Board which also indicated the Board's view that Article 123(3) EPC was contravened (see paragraph VI above), either within the prescribed time limit or at all.

Reasons for the Decision

1. Article 123(3) EPC

According to step (a) of claim 1 as granted (see paragraph I above), an aqueous solution of a soluble precursor of an additive metal oxide is **formed**. In step (b) of the claim, at least one primary metal oxide **powder** is **mixed** in said aqueous solution to form a suspension or slurry of the primary metal oxide powder in the said solution. Also, as stated in step (c), a precipitation agent is added to **the** suspension or slurry (i.e. the suspension or slurry mentioned in step (b)). Thus, the step (b) of mixing of a primary metal oxide in an aqueous solution follows the step (a) of formation of the aqueous solution, and then the step (c) of addition of a precipitation reagent to the suspension or slurry follows the step (b).

In amended claim 1 forming the basis of the patent Proprietor's request (see paragraph III above), an aqueous solution of an additive metal oxide, a primary metal oxide powder **in a suspension or slurry form**, and a precipitation reagent are **combined**.

Thus, the **step of formation of an aqueous solution** is omitted from the amended claim 1. Moreover, whereas claim 1 as granted requires that the primary metal oxide powder is **mixed** with the aqueous solution of the additive metal oxide, in the amended claim these

constituents are merely *combined*. Furthermore, as submitted by the Opponent, the step (c) of addition of a precipitation reagent to the suspension or slurry of claim 1 as granted is not present in the amended claim 1. In this connection, as mentioned above, in claim 1 as granted the step of adding a precipitation reagent to the suspension or slurry follows step (b) of mixing of primary metal oxide in the aqueous solution. The amended claim 1, on the contrary, specifies that the precipitation agent is added to the slurry of the primary metal oxide *prior* to the combination of the precipitation agent with the aqueous solution, and therefore, by implication, prior to the combination of the suspension or slurry of primary metal oxide with the aqueous solution. Thus the earlier restriction of the sequence of steps (a), (b) and (c) is removed from the amended claim 1.

For the foregoing reasons, in the Board's judgment, claim 1 filed with the grounds of appeal has been amended so as to extend the protection conferred and therefore does not comply with the requirement of Article 123(3) EPC.

2. In view of the above, the issue of inventive step in the claimed subject-matter need not be considered.

Order

For these reasons it is decided that:

The appeal is dismissed.

Registrar:

Chairman:

M. Kiehl

G. D. Paterson

