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**Datasheet for the decision  
of 11 January 2024**

**Case Number:** T 0884/21 - 3.3.06

**Application Number:** 15775705.5

**Publication Number:** 3207114

**IPC:** C11D17/04, C11D3/33

**Language of the proceedings:** EN

**Title of invention:**

Container comprising a detergent composition containing MGDA

**Patent Proprietor:**

BASF SE

**Opponent:**

Nouryon Chemicals International B.V.

**Headword:**

Mixture of MGDA L- and D-enantiomers/BASF

**Relevant legal provisions:**

EPC Art. 56

RPBA 2020 Art. 12(4), 12(6), 13(2)

**Keyword:**

Admissibility of experimental evidence filed with the grounds of appeal - (yes) - reply to argument raised for the first time during opposition oral proceedings

Admissibility of the auxiliary request filed 6 months after the written board's preliminary opinion - (no) - no exceptional circumstances justified with cogent reasons

Inventive step - (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

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Case Number: T 0884/21 - 3.3.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.06**  
**of 11 January 2024**

**Appellant:** Nouryon Chemicals International B.V.  
(Opponent) Velperweg 76  
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**Representative:** Kutzenberger Wolff & Partner  
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**Respondent:** BASF SE  
(Patent Proprietor) 67056 Ludwigshafen (DE)

**Representative:** BASF IP Association  
BASF SE  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
14 April 2021 concerning maintenance of the  
European Patent No. 3207114 in amended form.**

**Composition of the Board:**

**Chairman** J.-M. Schwaller  
**Members:** L. Li Voti  
J. Hoppe

## Summary of Facts and Submissions

I. The opponent and the patent proprietor both filed an appeal against the decision of the opposition division to maintain European patent no. 3 207 114 in amended form on the basis of the then pending auxiliary request 2, claim 1 thereof reading as follows:

*"1. Container comprising a single unit dose of a detergent composition containing at least one complexing agent (A) dissolved in an aqueous medium, said complexing agent (A) being a mixture of the L- and D-enantiomers of methyl glycine diacetic acid (MGDA) or its respective mono-, di- or trialkali metal or mono-, di- or triammonium salts, said mixture containing predominantly the respective L-isomer with an enantiomeric excess (ee) in the range of from 5 to 85% and a pH value in the range from 10 to 13.5, wherein said container is made from a polymer, and wherein such aqueous medium comprises at least 33% by weight of water, referring to the entire continuous phase."*

II. With its grounds of appeal, the opponent submitted a new experimental report (ER3) and argued that the above claimed subject-matter lacked an inventive step starting from document D2 (WO 2014/161786 A1). It also cited the documents D3 (WO 2009/040544 A1), D5 (WO 2012/136474 A1), ER1 (BASF Experimental Report) and ER2 (Nouryon Experimental Report).

III. With its grounds of appeal, the proprietor contested the decision and requested to maintain the patent as granted, or alternatively, on the basis of the claims according to one of auxiliary requests 1 to 3 as filed in the opposition proceedings. Moreover, with its reply

to opponent's appeal, it filed a new set of amended claims as auxiliary request 4.

IV. Following the board's preliminary opinion the proprietor submitted further arguments with a letter dated 21 December 2023 including a new set of claims as auxiliary request 5 and a new document labeled as D9 (WO 2016/058875 A1).

V. At the oral proceedings held on 11 January 2024, the proprietor withdrew its appeal and its auxiliary request 4. The parties' final requests were as follows:

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

The proprietor (now respondent) requested that the opponent's appeal be dismissed (i.e. that the patent be maintained in amended form on the basis of auxiliary request 2), or as an auxiliary measure, that the patent be maintained in amended form on the basis of auxiliary request 3 submitted with letter of 19 December 2019, or of auxiliary request 5, filed with letter of 21 December 2023.

VI. Claim 1 of auxiliary request 3 reads as follows:

*"1. Process for making a container comprising a single unit dose of a detergent composition containing at least one complexing agent (A) dissolved in an aqueous medium, said complexing agent (A) being a mixture of the L- and D-enantiomers of methyl glycine diacetic acid (MGDA) or its respective mono-, di- or trialkali metal or mono-, di- or triammonium salts, said mixture containing predominantly the respective L-isomer with an enantiomeric excess (ee) in the range of from 5 to*

85 % and a pH value in the range from 10 to 13.5, wherein said container is made from a polymer, and wherein such aqueous medium comprises at least 33% by weight of water, referring to the entire continuous phase, or for making a compartment of such container, said process comprising the steps of

- (a) providing a polymer,
- (b) shaping the polymer in a way that it has at least one recess so it can contain a liquid,
- (c) providing a complexing agent (A) dissolved in an aqueous medium, said complexing agent (A) being a mixture of the L- and D-enantiomers of methyl glycine diacetic acid (MGDA) or its respective mono-, di- or trialkali metal or mono-, di- or triammonium salts, said mixture containing predominantly the respective L-isomer with an enantiomeric excess (ee) in the range of from 5 to 85 %,
- (d) placing said aqueous medium containing complexing agent (A) according to step (c) into the formed recess according to step (b),
- (e) closing the open container or compartment, respectively."

Claim 1 of auxiliary request 5 reads as follows:

"1. Container comprising a single unit dose of a detergent composition containing at least one complexing agent (A) dissolved in an aqueous medium, said complexing agent (A) being a mixture of the L- and D-enantiomers of methyl glycine diacetic acid (MGDA) or its respective mono-, di- or trialkali metal or mono-, di- or triammonium salts, said mixture containing predominantly the respective L-isomer with an enantiomeric excess (ee) in the range of from 5 to 85%, wherein said container is made from a polymer, and wherein such aqueous medium comprises at least 33% by

*weight of water, referring to the entire continuous phase, and wherein complexing agent (A) is selected from a mixture of L- and D-isomers of the disodium monopotassium salt of MGDA, of the dipotassium monosodium salt of MGDA, of trialkali metal salts wherein 20 to 25 mole-% of the alkali are potassium and the remaining 75 to 80 mole-% are sodium, of trialkali metal salts wherein 20 to 25 mole-% of the alkali metal are sodium and the remaining 75 to 80 mole-% are potassium, and of the tripotassium salt of MGDA."*

### **Reasons for the Decision**

1. Inventive step (Article 56 EPC) - auxiliary request 2
- 1.1 Claim 1 at issue relates to a container made from a polymer comprising a single unit dose of a detergent composition containing at least one complexing agent dissolved in an aqueous medium comprising at least 33% by weight of water, the complexing agent being a mixture of the L- and D-enantiomers of methyl glycine diacetic acid (**MGDA**), or its alkali metal or ammonium salts.
- 1.2 As stated in the patent (paragraphs [0004]-[0008]), unit doses for automatic dishwashing and laundry care in the form of tablets, pellets or pouches, and comprising several compartments are known and of great convenience. However, compartments made of polymer film may be damaged upon storage by the water contained therein and solutions of a sequestrant like MGDA may be provided in such a compartment without precipitation or crystallisation only at concentrations of up to 40% by weight at ambient temperature. The objective of the invention is thus to provide a detergent composition in unit dose form or a method of manufacturing that can

overcome such drawbacks, i.e. the provision of a detergent composition in unit dose form comprising (1) compartments made of polymer film which are stable upon storage in the presence of water and (2) containing MGDA solutions not showing precipitation or crystallisation at ambient temperature even at high concentration.

- 1.3 The parties acknowledged document D2 as representing a suitable starting point for the evaluation of inventive step, as this document discloses (claim 1; page 2, lines 20-22; page 3, lines 1-9; page 15, lines 34-37) an automatic dishwashing detergent composition which comprises MGDA in the form of one of its enantiomers or as a mixture of its L- and D-enantiomers and which can be provided as a packaged unit dose containing a liquid composition comprising 35 to 90% water.

In particular, the closest prior art is represented by a liquid detergent composition in unit dose form comprising MGDA as disclosed in the description of D2 (page 15, lines 34-37 in combination with page 3, lines 1-9), which thus differs from the subject-matter of claim 1 at issue in that

- the unit dose is in the form of a container made from a polymer,
- MGDA is present as a mixture of its L- and D-enantiomers wherein the enantiomeric excess of the L-isomer (**ee**) is in the range of 5 to 85%, and
- the pH value is in the range from 10.0 to 13.5.

- 1.4 As regards the alleged effect that the compartments made of a polymer film are stable upon storage in the presence of water, the board notes that claim 1 does not further characterise the polymer used, and the patent in suit (paragraph [0025] ff) lists a multitude

of polymers (with polyvinyl alcohol being only a preferred one), but the patent neither contains any teaching that specific polymers might provide a superior stability nor does it provide any comparison showing the alleged effect. Since the patent also does not contain any evidence supporting the argument that the chosen pH or MGDA enantiomer mixture would have an effect on the polymer film stability, it is not credible that the alleged stability improvement addressed to in the patent could be achieved for any possible polymer, as claim 1 extends to any kind of polymer without being restricted to water-soluble ones nor to polymers which are sensitive to the specific pH range of claim 1. Therefore, the above alleged advantage has to be disregarded in the formulation of the objective technical problem in view of D2 as closest prior art.

1.5 As regards the alleged provision of a detergent composition in unit dose form containing MGDA solutions not showing precipitation or crystallisation at ambient temperature even at high concentration, the patent in suit (paragraph [0150]) shows that a pouch comprising a 50% weight solution of MGDA-Na<sub>3</sub> with an ee of 10%, 30.6% or 36.2% does not suffer from precipitation even after storage at 5°C. Further it states (paragraphs [0152]-[0153]) that a unit dose of detergent composition in the form of a tablet packed together with the pouch described above may be used conveniently in automatic dishwashing whilst in a pouch comprising MGDA-Na<sub>3</sub> racemate (thus without an excess of the L-enantiomer) precipitation can be observed after a few hours.

1.5.1 In the respondent's experimental report ER 1 it is shown that a 40% by weight solution of MGDA-Na<sub>3</sub> having

a pH adjusted to 10.5, being contained in a PVA pouch and having an ee of 15% or 40%, is still clear when evaluated visually after 3 days storage at 23°C whilst MGDA-solutions having an ee of 80% or 70% are slightly turbid, those having an ee of 97% or 100% suffer from precipitation and the racemate is turbid. Thus, ER 1 shows that 40% by weight solutions of MGDA-Na<sub>3</sub> at ambient temperature do not provide precipitation or crystallisation across the range of ee of 5 to 85% as claimed.

The board has thus no reason to doubt that the partial technical problem of providing a detergent composition in unit dose form comprising high concentrated aqueous MGDA solutions which do not show precipitation or crystallisation at ambient temperature has been solved by means of the product as claimed.

- 1.6 The respondent also argued that the solution of the above technical problem required the choice of a solution having a pH in the range of 10 to 13.5 and an MGDA enantiomers mixture having an ee not exceeding 85%.
  - 1.6.1 However, the board remarks that no evidence has been submitted that the chosen pH range provides any effect on the MGDA solubility, and the patent (paragraphs [059]) only teaches that the claimed pH range is preferred without however containing any teaching or evidence for a superior effect. The selected pH range of claim 1 at issue is thus not critical for the solution of the above technical problem.
  - 1.6.2 As regards the MGDA enantiomers mixtures having an ee exceeding 85%, the board remarks that, contrary to what is shown in ER1, the appellant's experimental reports

ER2 and ER3 convincingly show that the solubility of MGDA isomer mixtures having a pH within the claimed range still increases beyond the ee upper limit of claim 1.

As regards the admissibility of ER3, filed by the appellant with its grounds of appeal, the board remarks that it was contested for the first time at the oral proceedings before the opposition division that ER2 did not disclose a pH value falling within the claimed range. As ER 3 reports the used pH, this report was thus clearly filed as a reaction to the decision under appeal with respect to the then pending auxiliary request 2, wherein experimental report ER 2 not containing any direct measurement of the pH was disregarded. The board thus has exercised its discretion to admit ER3 into the appeal proceedings (Article 12(4) and (6) RPBA 2020).

In this respect, the board finds that ER2 and ER3 convincingly cast doubts on the criticality of the upper limit of the ee value of claim 1 at issue and can thus not accept that the increased solubility of the MGDA would be achieved only across the claimed ee range.

- 1.7 As regards the features distinguishing claim 1 from the closest prior art, the board notes that it was known, for example from D3 (page 7, lines 5-18) which belongs to the same technical field as D2, to provide a unit dose for automatic dishwashing comprising solid and liquid compositions in the form of a multi-chambered body having the walls of the compartment made of a polymer such as PVA (the same polymer used in the examples of the patent and also in ER 1), and so it was obvious for the skilled person to provide the liquid

composition of D2, which is suitable for automatic dishwashing and contains MGDA, in a unit dose having compartments made of a polymer.

- 1.7.1 It was further known, e.g from D5 (page 7, lines 26-30), that the L-enantiomer of MGDA is more soluble than the racemate and has the advantage of providing more concentrated and storage stable solutions. Considering that claim 1 at issue does not require any minimum concentration of MGDA in the aqueous medium, it was thus obvious for the skilled person faced with the above technical problem and aware of the technical information contained in D5, to try an increased amount of L-enantiomer in the MGDA aqueous solutions used in D2, for example a solution having an ee in accordance with claim 1 at issue, in order to provide an aqueous solution of MGDA which does not show precipitation or crystallisation at ambient temperature and at higher concentrations.
- 1.7.2 It is further noted that D2 already disclosed (page 13, lines 24-25) a preferred pH range of 8 to 13, thus including almost entirely the range of 10 to 13.5 of claim 1 at issue. Therefore, it was also obvious for the skilled person to provide a composition representing the closest prior art at a pH within the range of claim 1 at issue.
- 1.8 The board thus concludes from the above considerations that it was obvious for the skilled person, faced with the above technical problem, to provide a container having all the features of claim 1 at issue, which thus lacks an inventive step within the meaning of Article 56 EPC. Auxiliary request 2 is thus not allowable.

2. Auxiliary request 3 - inventive step

2.1 Claim 1 at issue concerns a process for the preparation of a container as defined in claim 1 of auxiliary request 2 discussed above, wherein the process steps are the following:

- (a) providing a polymer,
- (b) shaping the polymer in a way that it has at least one recess so it can contain a liquid,
- (c) providing a complexing agent dissolved in an aqueous medium comprising at least 33% by weight of water, the complexing agent being a mixture of the L- and D-enantiomers of MGDA or its alkali metal or ammonium salts (i.e. the same as defined in claim 1 of auxiliary request 2),
- (d) placing said liquid into the formed recess according to step (b),
- (e) closing the open container.

2.2 The board agrees in this respect with the decision under appeal that all the steps recited above are simple and commonplace steps that a skilled person would consider when making a container comprising a single unit dose for the aqueous solution of MGDA.

In fact, a polymer for the container walls has necessarily to be provided and shaped for containing the complexing agent solution, furthermore the solution must be filled within and the container must be closed for being used in a machine dishwasher, as disclosed for example in D2.

Therefore, all the above steps are trivial and the skilled person would necessarily apply them in preparing a container containing the liquid MGDA isomers mixture of D2.

2.3 As no particular effect has further been made credible, the same arguments exposed with respect to the container of auxiliary request 2 still apply to the process claimed.

2.4 Therefore, also the subject-matter of claim 1 of auxiliary request 3 is obvious for the skilled person faced with the above technical problem and thus, lacks an inventive step; this request is therefore not allowable either.

3. Auxiliary request 5 - admittance

3.1 This request having been filed by the respondent on 21 December 2023, i.e. about 6 months after the preliminary opinion of the board, according to Article 13(2) RPBA 2020, such an amendment of the respondent's case shall in principle not be taken into account unless there are exceptional circumstances which have been justified with cogent reasons by the party concerned.

3.2 In this particular case the respondent argued that this request was filed as a reaction to the board's preliminary opinion that auxiliary request 4 filed with the reply to the opponent's appeal, was held not allowable. Auxiliary request 5 was moreover based substantially on auxiliary request 4 and was clearly allowable since it restricted the claimed subject-matter to potassium MGDA salts, which were not disclosed in the cited prior art and proven as being more soluble than the sodium ones.

3.3 The board however notes that the respondent stated in writing that the arguments presented with respect to the higher ranking requests were also valid for

auxiliary request 4, and thus it is not immediately apparent to the board why the new request would overcome the outstanding objection of lack of an inventive step based on D2 as closest prior art. Furthermore, the board did not raise in its preliminary opinion any new argument which could have compelled the filing of further requests by the respondent. Moreover, as all objections addressed in the board's communication had already been raised earlier on in the proceedings, the communication cannot be regarded as creating exceptional circumstances within the meaning of Art. 13(2) RPBA 2020 (Case Law of the Boards of Appeal, 10th edition, V.A.4.5.6 c)).

- 3.4 The respondent could also not explain at the oral proceedings why it was not possible for him to file a more restricted request such as auxiliary request 5 already together with, or instead of auxiliary request 4, without expecting the board's preliminary opinion and well in advance of the oral proceedings.
- 3.5 The board notes also that the allowability of the new request would be based on a new issue (namely the higher solubility of MGDA potassium salts), which is neither disclosed in the patent in suit nor has it ever been discussed before the opposition division or during the appeal proceedings, so that its admittance into the present proceedings would be clearly detrimental to procedural economy.
- 3.6 It follows from the above considerations that there are no exceptional circumstances justified with cogent reasons for the filing of a further request at such a very late stage of the proceedings. The board has thus exercised its discretion not to take auxiliary request 5 into account under Article 13(2) RPBA 2020.

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated