

Internal distribution code:

- (A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

**Datasheet for the decision
of 17 March 2016**

Case Number: T 0151/13 - 3.3.10

Application Number: 05772361.1

Publication Number: 1771403

IPC: C07C29/62, C07D303/08

Language of the proceedings: EN

Title of invention:

CONVERSION OF A MULTIHYDROXYLATED-ALIPHATIC HYDROCARBON OR
ESTER THEREOF TO A CHLOROHYDRIN

Patent Proprietor:

Blue Cube IP LLC

Opponents:

Momentive Specialty Chemicals Research
Belgium S.A.
Akzo Nobel Chemicals International B.V.

Headword:

Relevant legal provisions:

EPC Art. 54, 123(2)

Keyword:

Main request and auxiliary requests 1A, 1 and 2A: amendments (no) - unallowable generalisation of value from Example
Auxiliary request 2: novelty (no) - purpose of a particular reagent in a known chemical process is not a functional technical feature in the sense of G 2/88 and does not render said process novel

Decisions cited:

G 0002/88, T 0201/83, T 0279/93, T 0714/00

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 0151/13 - 3.3.10

D E C I S I O N
of Technical Board of Appeal 3.3.10
of 17 March 2016

Appellant: Blue Cube IP LLC
(Patent Proprietor) 2030 Dow Center
Midland MI 48674 (US)

Representative: Bumke, Jakob Wenzel
Greaves Brewster LLP
Copa House
Station Road
Cheddar BS27 3AH (GB)

Respondent I: Momentive Specialty Chemicals Research
(Opponent 1) Belgium S.A.
Avenue Jean Monnet 1
1348 Ottignies Louvain-la-Neuve (BE)

Representative: Momentive Specialty Chemicals Research
Belgium S.A.
IP Section
Avenue Jean Monnet 1
1348 Ottignies Louvain-la-Neuve (BE)

Respondent II: Akzo Nobel Chemicals International B.V.
(Opponent 2) Velperweg 76
6824 BM Arnhem (NL)

Representative: Ligtenbarg, Alette Gerda Jeannet
Akzo Nobel N.V.
Department Legal & IP
P.O.Box 9300
6800 SB Arnhem (NL)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 3 December 2012**

revoking European patent No. 1771403 pursuant to
Article 101(3) (b) EPC.

Composition of the Board:

Chairman	P. Gryczka
Members:	J. Mercey
	C. Schmidt

Summary of Facts and Submissions

- I. The Appellant (Proprietor of the Patent) lodged an appeal against the decision of the Opposition Division revoking European patent No. 1 771 403.
- II. Notice of Opposition had been filed by Respondent I (Opponent 1) and Respondent II (Opponent 2) requesting revocation of the patent in its entirety *inter alia* on the grounds of lack of novelty (Article 100(a) EPC). *Inter alia* the following document was submitted in opposition proceedings:
- (2) DE 955 233.
- III. The Opposition Division found that the subject-matter of claim 1 of the then pending main request (patent as granted) was not novel over *inter alia* document (2), and that of the then pending auxiliary requests 1 to 3 was also not novel over another document. In view of its complexity, the auxiliary request submitted during the oral proceedings was not admitted into the proceedings.
- IV. With the statement of grounds of appeal dated 12 April 2013, the Appellant filed a main request and an auxiliary request, said auxiliary request corresponding to the auxiliary request filed during the oral proceedings before the Opposition Division and not admitted into the proceedings. With letter dated 19 September 2014, it filed an auxiliary request 1, the auxiliary request on file becoming auxiliary request 2, and with letter dated 17 February 2016, it filed auxiliary requests 1A and 2A.

Claim 1 of the main request reads:

"A process for producing a chlorohydrin, comprising the step of contacting a multihydroxylated-aliphatic hydrocarbon with a source of a superatmospheric partial pressure of hydrogen chloride, in the presence of a catalyst to produce a chlorohydrin, said contacting step carried out without substantial removal of water; wherein the multihydroxylated-aliphatic hydrocarbon is a vicinal -diol (1,2-diol) or triol (1,2,3-triol) containing hydrocarbon or a chlorohydrin that contains two hydroxy groups and wherein the process is carried out at a hydrogen chloride partial pressure of at least 80 psi (650 kPa); and at a temperature of from 50°C to 140°C."

Claim 1 of auxiliary request 1 differs from that of claim 1 of the main request in that the catalyst is defined as being acetic acid, a derivative of acetic acid, caprolactone, or a derivative of caprolactone.

Claim 1 of each of auxiliary requests 1A and 2A differs from that of claim 1 of the main request an auxiliary request 1, respectively, only in that the hydrogen chloride partial pressure is specified as being at least 80 psig.

Claim 1 of auxiliary request 2 reads as follows:

"The use in a process for producing a chlorohydrin, an ester of a chlorohydrin, or a mixture thereof, which process comprises the step of contacting a multihydroxylated-aliphatic hydrocarbon, an ester of a multihydroxylated-aliphatic hydrocarbon, or a mixture thereof with hydrogen chloride, in the presence of a catalyst to produce a chlorohydrin, an ester of a chlorohydrin, or a mixture thereof, of a source of a

superatmospheric partial pressure of said hydrogen chloride, and of carrying out said contacting step carried out without substantial removal of water, in order to reduce the level of 1,2,3 trichloropropane, chlorinated ethers and oligomers in the product."

- V. The Appellant submitted that the appeal was admissible and that all claim requests should be admitted into the proceedings. Should the Board conclude that the appeal were inadmissible, then the Appellant requested a referral to the Enlarged Board of Appeal to ensure uniform application of the law.

The subject-matter of claim 1 of the main request and auxiliary requests 1A, 1 and 2A fulfilled the requirements of Article 123(2) EPC, the value of 80 psi(g) being disclosed in Example 50, Examples 44 to 51 showing a significant step-change in the yields of desired products once the partial pressure reached 80 psig, such that there was a basis in the application as filed for 80 psi(g) as the lower limit of the hydrogen chloride partial pressure. Said value was not so closely associated with the other features of the example that it could not be generalised.

Claim 1 of auxiliary request 2 was a "use" claim in the sense of decision G 2/88 (OJ EPO 1990, 93), such that the subject-matter thereof was novel over document (2) in view of the previously undisclosed technical effect of the use of superatmospheric partial pressure of hydrogen chloride, without the substantial removal of water during the contacting step, in order to reduce the level of 1,2,3 trichloropropane, chlorinated ethers and oligomers in the product.

VI. During the oral proceedings before the Board, held on 17 March 2016, Respondent II withdrew its objections to lack of admissibility of the appeal and of the claim requests.

The subject-matter of claim 1 of the main request and auxiliary requests 1A, 1 and 2A did not fulfil the requirement of Article 123(2) EPC, as the value of 80 psi(g) for the hydrogen chloride partial pressure represented an unallowable extraction of an isolated feature from an example, namely Example 50. In addition, Example 50 did not in fact even disclose a value of 80 psi, but rather 80 psig.

Respondent II agreed with the preliminary view of the Board expressed in its communication dated 17 November 2015 that the subject-matter of claim 1 of auxiliary request 2 was not novel over document (2) for the very same reasons given in the contested decision as to why claim 1 of the then pending main request was not novel. Furthermore, the subject-matter of claim 1 of this request did not fulfil the requirement of Article 123(2) EPC, as there was no basis in the application as filed for using a source of superatmospheric partial pressure of hydrogen chloride, without the substantial removal of water during the contacting step, in order to reduce the level of 1,2,3 trichloropropane, chlorinated ethers and oligomers in the product. Said claim was unclear, since it comprised a mixture of on the one hand process features, and on the other hand the use of certain features to achieve an effect, resulting in it being confusing and complex.

VII. Respondent I made no submissions as to the substance of the appeal, nor did it file any requests.

VIII. The Appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request filed with letter dated 12 April 2013, or, alternatively on the basis of auxiliary request 1A filed with letter dated 17 February 2016, or on the basis of auxiliary request 1 filed with letter dated 19 September 2014, or on the basis of auxiliary request 2A filed with letter dated 17 February 2016, or on the basis of auxiliary request 2 filed with letter dated 12 April 2013.

Respondent II requested that the appeal be dismissed.

IX. At the end of the oral proceedings, which were held in the absence of the Appellant and Respondent I, who, after having been duly summoned, informed the Board that they would not attend, the decision of the Board was announced.

Reasons for the Decision

1. Admissibility of the appeal and claim requests

1.1 The appeal is admissible.

1.2 During the oral proceedings before the Board, Respondent II no longer contested the admissibility of the appeal, nor that the claim requests should be admitted into the proceedings. The Board also sees no reasons as to why either the appeal or the claim requests should be deemed inadmissible. As a consequence, the Appellant's request to refer a question to the Enlarged Board of Appeal regarding admissibility of the appeal is redundant.

Main request and auxiliary requests 1A, 1 and 2A

2. *Amendments (Article 123(2) EPC)*

2.1 Claim 1 of the main request and auxiliary request 1 has been amended *vis-à-vis* claim 1 as originally filed *inter alia* in that the hydrogen chloride partial pressure is specified as being at least 80 psi, claim 1 of auxiliary requests 1A and 2A in that the hydrogen chloride partial pressure is at least 80 psig.

2.2 The Appellant submitted that basis for this lower limit of hydrogen chloride partial pressure of 80 psi(g) found a basis in Example 50 of the application as filed.

2.3 Extracting an isolated feature from an originally disclosed combination and using it for delimiting claimed subject-matter can only be allowable under Article 123(2) EPC if that feature is not inextricably linked with further features of that combination (see, for example, T 714/00, point 3.3 of the Reasons, not published in OJ EPO).

2.4 In the present case, it is common general knowledge that pressure and temperature influence reaction rate. Similarly, the reactivity of a particular starting material, and nature and amount of catalyst, could also have an effect on the particular partial pressure required for a gaseous reactant. The skilled person would thus derive from Example 50 nothing more than the bare disclosure of the specific characteristics of the particular process described therein, namely the reaction of a particular starting material, namely glycerol, with a specific amount of acetic acid and water, at a specific hydrogen chloride pressure, namely

80 psig, at a specific temperature, namely 90°C, for a specific reaction time, namely 120 minutes.

2.5 Therefore, the original disclosure of a specific pressure in one example cannot support the generalisation indicated in claim 1 of any of the main request or auxiliary requests 1A, 1 or 2A which results in covering this specific hydrogen chloride partial pressure for the reaction of any multihydroxylated-aliphatic hydrocarbon, with any amount of catalyst, which does not have to be acetic acid, at any temperature of from 50°C to 140°C, for any reaction time. Hence, in the context of claim 1 of all these requests the feature that the hydrogen chloride partial pressure is at least 80 psi(g) is an undue generalisation of a particular embodiment of a specific example which generates fresh subject-matter.

2.6 For the following reasons the Board cannot accept the Appellant's arguments that said feature was indeed supported by the application documents as filed.

2.6.1 The Appellant argued that the value of 80 psi(g) from Example 50 was not so closely associated with the other features of the example that it could not be generalised, and cited decision T 201/83 in this respect.

The Board notes that in decision T 201/83, in the case of an amendment of the definition of a lead alloy comprising calcium and magnesium in certain weight ranges, the introduction into claim 1 of a (higher) lower limit of calcium which had been disclosed only in combination with specific amounts of magnesium and tin was allowed in view of the loose connection between particular calcium and magnesium contents with regard

to the effect, such that the expert would treat them as features of design that could be separately considered (see point 9 of the Reasons).

However, unlike the situation underlying T 201/83, in the present case there is a strong connection between the partial pressure of a gaseous reactant and the other reaction conditions e.g. nature of starting material and catalyst and reaction temperature (see point 2.4 above) with regard to the progress of the reaction, rendering it not possible to extract the isolated value of the hydrogen chloride pressure from Example 50.

2.6.2 The Appellant also argued that Examples 44 to 51 demonstrated a significant step-change in the yields of desired products once the partial pressure reached 80 psi(g), thus providing a basis in the application as filed for 80 psi(g) as the lower limit of the hydrogen chloride partial pressure.

However, the fact that at this particular partial pressure of hydrogen chloride increased yields of products may be achieved, is irrelevant to the question of support for an amendment under Article 123(2) EPC, since the information which the skilled person derives from Example 50, in combination with Examples 44 to 49 and 51, is merely that particularly good yields of products may be achieved as from a partial pressure of hydrogen chloride of 80 psig, but only under specific reaction condition, e.g. for a specific starting material, with a specific catalyst and at a specific temperature (see point 2.4 above).

2.7 Since the isolated value of the hydrogen chloride partial pressure cannot be extracted from Example 50,

it is irrelevant for the present decision, whether said Example discloses a value of 80 psi or 80 psig.

- 2.8 For these reasons, the Board concludes that claim 1 of the main request and auxiliary requests 1A, 1 and 2A extends the subject-matter claimed beyond the content of the application as filed, thus contravening the provisions of Article 123(2) EPC.

Auxiliary request 2

3. *Clarity and amendments (Articles 84 and 123(2) EPC)*

Respondent II submitted that claim 1 of auxiliary request 2 was unclear and contained subject-matter extending beyond the content of the application as filed. In view of the negative conclusion in respect of novelty as set out in point 4 below, a decision of the Board on these issues is unnecessary.

4. *Novelty*

4.1 Document (2) discloses a process for making pentaerythritol trichlorohydrin by contacting pentaerythritol with hydrogen chloride under pressure in the presence of a monocarboxylic acid, such as acetic acid (see page 1, lines 17 to 26 and Example 1 on page 2, lines 45 to 56). Since said reaction is carried out in an autoclave, water is not removed and superatmospheric partial pressure of hydrogen chloride is an inevitable consequence, as concluded in the decision under appeal (see point 9.1.2, 4th paragraph). The Board agrees with this conclusion of the Opposition Division, the Appellant not having provided any arguments against this conclusion in the course of the appeal proceedings.

Document (2) thus discloses all the process features of claim 1 of auxiliary request 2.

4.2 The Appellant argued, that claim 1 was, however, a "use" claim in the sense of decision G 2/88, such that the subject-matter thereof was novel over document (2) in view of the previously undisclosed technical effect of the use of superatmospheric partial pressure of hydrogen chloride, without the substantial removal of water during the contacting step, in order to reduce the level of 1,2,3 trichloropropane, chlorinated ethers and oligomers in the product.

4.3 According to decision G 2/88 (*ibid.*, see point 10.3 of the Reasons in combination with question (iii) in point I of the Summary), novelty within the meaning of Article 54(1) can be acknowledged in cases where the discovery of a new technical effect of a known substance leads to an invention which is defined in the

claim in terms of a use of that substance for a hitherto unknown, **new** non-medical purpose reflecting said effect (i.e. a new functional technical feature), even if the only novel feature in that claim is the purpose for which the substance is used (emphasis added).

- 4.4 In the present case, the Board holds that the otherwise identical process disclosed in document (2) (see point 4.1 above) must result in the same levels of 1,2,3 trichloropropane, chlorinated ethers and oligomers being produced as in the process defined in claim 1 of auxiliary request 2, i.e. there is no reduction in the level of these compounds *vis-à-vis* Example 1 of document (2). There may indeed be no corresponding statement of intended purpose in document (2), namely that the use of a source of superatmospheric partial pressure of hydrogen chloride, without the substantial removal of water during the contacting step, is responsible for the levels of 1,2,3 trichloropropane, chlorinated ethers and oligomers obtained in the product, but ascertaining that said levels are due to said use is a mere discovery, this additional information contained in the patent in suit not teaching the skilled person to do anything over and above what is already disclosed in document (2) which would not have been done without knowing the content of the patent in suit. Thus, the claim is **not** directed to a **new** use of a source of superatmospheric partial pressure of hydrogen chloride without the substantial removal of water in the sense of G 2/88, but amounts to the **mere explanation of an effect** obtained when using said features in a known process. As such, "The use in a process for producing a chlorohydrin" of certain process features "in order to reduce the level of 1,2,3 trichloropropane, chlorinated ethers and oligomers in

the product" does not represent a new functional technical feature in the sense of G 2/88, with the result that said "use in a process" is nothing but that very same process, i.e. the process of granted claim 1. Therefore, said use is not novel for the same reasons given in the contested decision (see point 19.1.2 thereof) as to why the process of granted claim 1 was not novel, said reasons also being given in point 4.1 above.

4.5 This reasoning is in line with decision T 279/93 (see point 5ff of the Reasons, not published in OJ EPO), wherein a claim directed to the use of an alkanolamine in a known process for preparing hydroxy-functional melamine derivatives in order to reduce the formation of isomelamine impurities was found not to be novel, since said use was considered to merely represent a discovery. In said decision, it is indicated (see point 5.4 of the Reasons) that in order to convert this discovery into a patentable invention, and to show the characteristic of a new technical effect as required by decision G 2/88, the use referred to in the claim would have to be some new use which exploits this discovery for some new technical purpose.

4.6 As a result, auxiliary request 2 is not allowable as the subject-matter of claim 1 lacks novelty within the meaning of Articles 52(1) and 54(1) and (2) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



C. Rodríguez Rodríguez

P. Gryczka

Decision electronically authenticated