

Internal distribution code:

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

**Datasheet for the decision
of 25 October 2007**

Case Number: T 0728/05 - 3.3.10

Application Number: 97913495.4

Publication Number: 0900774

IPC: C07C 27/14

Language of the proceedings: EN

Title of invention:

Process for the preparation of acrolein and acrylic acid

Patentee:

NIPPON KAYAKU KABUSHIKI KAISHA

Opponent:

BASF Aktiengesellschaft
Nippon Shokubai Company Limited

Headword:

Nippon Kayaku/BASF/NIPPON SHOKUBAI

Relevant legal provisions:

EPC Art. 123(2)

Keyword:

"Extension of subject-matter (yes)"

Decisions cited:

T 0288/92, T 0680/93

Catchword:

-



Case Number: T 0728/05 - 3.3.10

DECISION
of the Technical Board of Appeal 3.3.10
of 25 October 2007

Appellant: NIPPON KAYAKU KABUSHIKI KAISHA
(Patent Proprietor) 11-2, Fujimi 1-chome
Chiyoda-ku
Tokyo 102-0071 (JP)

Representative: Gille Hrabal Struck Neidlein Prop Roos
Patentanwälte
Brucknerstrasse 20
D-40593 Düsseldorf (DE)

Respondent 01: BASF Aktiengesellschaft
(Opponent) Patente, Marken und Lizenzen
D-67056 Ludwigshafen (DE)

Representative: -

Respondent 02: Nippon Shokubai Company Limited
(Opponent) 1-1, Koraibashi 4-chome
Chuo-ku
Osaka-shi
Osaka 541 (JP)

Representative: Schön, Christoph
Patentanwälte
Henkel, Feiler & Hänzler
Maximiliansplatz 21
D-80333 München (DE)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 4 April 2005
revoking European patent No. 0900774 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: R. Freimuth
Members: C. Komenda
J.-P. Seitz

Summary of Facts and Submissions

- I. The Appellant (Proprietor of the Patent) lodged an appeal on 1 June 2005 against the decision of the Opposition Division posted on 4 April 2005 revoking European patent No. 900 774 and on 12 August 2005 filed a written statement setting out the grounds of appeal.
- II. Notice of Opposition had been filed by the Respondents I and II (Opponents 01 and 02), requesting revocation of the patent in its entirety on the grounds of lack of novelty and inventive step (Article 100(a) EPC), and the Respondent II additionally objected to the subject-matter of the patent in suit as extending beyond the content of the application as filed (Article 100(c) EPC).
- III. The Opposition Division held that the patent according to the then pending main request extended beyond the content of the application as filed. Additionally the patent according to the then pending auxiliary request was found to lack of inventive step.
- IV. The Appellant, annexed to his letter of 25 September 2007, submitted a fresh main request and auxiliary request, thus superseding any previous request. Independent claim 1 of the main request read as follows:
- "1. A method for producing acrolein and acrylic acid by carrying out vapor phase catalytic oxidation of propylene with molecular oxygen or a gas containing molecular oxygen using an oxidation catalyst and a fixed bed multitubular reactor, which comprises

a) using a plurality of catalysts supported on a carrier, wherein the plurality of supported catalysts having different activities is obtained by using a molding additive and/or a strength improving agent when the supported catalysts are prepared, the plurality of catalysts differing in the amount of the catalytically active component supported on the carrier and the higher catalytic activity being displayed by the carriers supporting the larger amount of the catalytically active component,

b) setting a plurality of catalyst layers within a reaction tube, which is formed by dividing it into plural portions in the tube axial direction, and

c) arranging the catalyst layers in such order that the activity of the catalyst in said layers becomes higher toward the outlet from the inlet of the material gas in the reaction tube axial direction,

wherein the type of the carrier of the plural supported catalysts having different activities is the same,

wherein the ratio of the supported components including the catalytically active components (total supporting ratio) of the plurality of the supported catalysts having different activities, is 10 - 60 % by weight based on the total weight of the catalyst,

wherein the composition of the catalytically active component of the plural supported catalysts having different activities is the same,

and wherein the composition of the catalytically active components is represented by the following formula



wherein Mo, Bi, Ni, Co and Fe represent molybdenum, bismuth, nickel, cobalt and iron, respectively, Y is at least one element selected from the group of tin, zinc, tungsten, chromium, manganese, magnesium, antimony and titanium, Z is at least one element selected from the group of potassium, rubidium, thallium and cesium, and a, b, c, d, f, g, h and x represent the number of atoms of molybdenum, bismuth, nickel, cobalt, iron, Y, Z, and oxygen, respectively, whereby $a = 12$, $b = 0.5$ to 4 , $c + d = 1$ to 12 , $f = 0.5$ to 5 , $g = 0$ to 1 , $h = 0.01$ to 0.5 and x is determined by the oxidized condition of each element in the plurality of supported catalysts having different activities."

Claim 1 according to the first auxiliary request differed from claim 1 according to the main request exclusively in that the feature "and the catalyst being calcined at a lower temperature" was appended to the wording of feature a).

- V. At the oral proceedings before the Board, held on 25 October 2007, the Appellant filed a second auxiliary request and a third auxiliary request, which requests were based on the wordings of the main request and of the first auxiliary request, respectively, and differed therefrom only in that in feature a) a further passage was included after "the amount of the catalytically active component supported on the carrier", reading "
", the supported amount being represented by the weight of the catalytically active components to the weight of (weight of catalytically active component + weight of carrier + weight of strength improving agent after calcination (optional component)),".

- VI. The Appellant argued that the fresh requests overcame the objections raised in the decision under appeal raised under Article 100(c) EPC. The amendments made to the claims in the main request, in particular the passage concerning "the higher catalytic activity being displayed by the carriers supporting the larger amount of the catalytically active component", was based on the passage bridging pages 5 and 6, and on Example 3 of the application as filed. Thus, he argued that the amendments made during the examining phase were based on the application as filed, which was also accepted by the previous instance.
- VII. The Respondents I and II argued that all requests extended beyond the content of the application as filed. Particularly, the feature concerning "the higher catalytic activity being displayed by the carriers supporting the larger amount of the catalytically active component", which was present in all the requests, was not based on the application as filed. According to its wording, this feature related to the absolute amounts of catalytically active component, whereas the passage bridging pages 5 and 6 related to the supporting amount of the catalysts, which was defined as weight ratio taking into account also the weight of the carrier and that of further additives. The phrase "whose supporting amount are the more" was regarded as being not equivalent to the now claimed larger amount of the catalytically active component. Further, the Respondent I argued that Example 3 could not be taken as basis for generalizing a feature.
- VIII. The Appellant requested that the decision under appeal be set aside and that the patent be maintained on the

basis of claims 1 to 4 according to the main request or, subsidiarily, on the basis of claims 1 to 3 of the first auxiliary request, both submitted with letter dated 25 September 2007, or more subsidiarily, on the basis of either the second or the third auxiliary requests filed during the oral proceedings before the Board.

The Respondents I and II requested that the appeal be dismissed.

IX. At the end of the oral proceedings the decision of the Board was announced.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. *Amendments (Article 100(c) EPC)*

2.1 The Appellants opposed the patent in suit on the ground that the subject-matter of that patent extended beyond the content of the application as filed. Therefore the amended claims comprised in the patent in suit must be fully examined by the Board as to whether or not that objection is well founded.

2.2 Claim 1 defines the plurality of supported catalysts to be used in the claimed process *inter alia* as being characterised by "the higher catalytic activity being displayed by the carriers supporting the larger amount

of the catalytically active component". The Respondents objected in particular to that feature resulting from an amendment of the claim as generating subject-matter extending beyond the content of the application as filed.

2.3 In order to determine whether or not the subject-matter of a claim in a patent extends beyond the content of the application as filed it has to be examined whether that claim comprises technical information which a skilled person would not have objectively and unambiguously derived from the application as filed (see decisions T 288/92, point 3.1 of the reasons; T 680/93, point 2 of the reasons; neither published in OJ EPO)

2.4 In the present case, amended claim 1 contains the feature that "the higher catalytic activity being displayed by the carriers supporting the larger amount of the catalytically active component". This wording relates to the absolute amounts, with the consequence that the supported catalyst having the higher activity is required to contain a larger absolute quantity of the catalytically active component. The passage bridging pages 5 and 6 in the application as filed, which was addressed by the Appellant and the Respondents as supporting or not that feature, however, does not relate to the absolute amount of the catalytically active component, but discloses the "supporting amount" thereof. The application as filed defines this term on page 9, lines 12 to 15. According to this definition the "supporting amount" is represented by the quotient "weight of catalytically active components/(weight of catalytically active

components + weight of carrier + weight of strength improving agent after calcination (optional ingredient)". Thus, the "larger amount of catalytically active components" indicated in amended claim 1 reflects only the numerator of the quotient representing the "supporting amount", but ignores the denominator, which is at variance with the definition given for the "supporting amount" in the application. Since the application as filed does not provide a proper basis for the feature in amended claim 1 of a "larger amount of the catalytically active component", that amendment is regarded as comprising technical information which a skilled person would not have objectively and unambiguously derived from the application as filed.

The Appellant argued that example 3 of the application as filed provided a basis for the disputed feature, since it used catalysts, which differed from each other exclusively in their supporting ratio, i.e. in fact in the absolute amount of the catalytically active component. Apart from trying to unduly generalise particular examples of the application as filed, the disputed amendment of claim 1 is anyhow inconsistent with the definition indicated in the application as filed for the "supporting amount" which was originally disclosed, thereby creating fresh subject-matter not being objectively and unambiguously derivable from the application as filed.

- 2.5 For these reasons, the Board concludes that claim 1 of the patent in suit according to the main request extends beyond the content of the application as filed,

thus justifying the ground for opposition pursuant to Article 100(c) EPC.

Auxiliary requests

3. *Amendments (Article 100(c) EPC)*

Since claim 1 of the first, the second and the third auxiliary requests contains the same feature that "the higher catalytic activity being displayed by the carriers supporting the larger amount of the catalytically active component" (see paragraphs IV and V, *supra*), the conclusions drawn in paragraphs 2.4 and 2.5 *supra* apply *mutatis mutandis* also to those auxiliary requests, i.e. the subject-matter claimed extends beyond the content of the application as filed, thus justifying the ground for opposition pursuant to Article 100(c) EPC.

4. In these circumstances, the Appellant's first, second and third auxiliary requests share the fate of the main request in that they, too, are not allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

P. Cremona

R. Freimuth