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**Datasheet for the decision  
of 23 January 2018**

**Case Number:** T 1284/15 - 3.3.10  
**Application Number:** 03700524.6  
**Publication Number:** 1471046  
**IPC:** C07C45/35, C07C47/22,  
C07C51/25, C07C57/05, B01J8/06  
**Language of the proceedings:** EN

**Title of invention:**

MULTIPIPE REACTOR, VAPOR PHASE CATALYTIC OXIDATION METHOD  
USING MULTIPIPE REACTOR, AND START-UP METHOD APPLIED TO  
MULTIPIPE REACTOR

**Applicant:**

Mitsubishi Chemical Corporation

**Headword:**

**Relevant legal provisions:**

EPC Art. 84, 111(1)  
EPC R. 43(1)

**Keyword:**

Claims - clarity - main request (yes)  
Appeal decision - remittal to the department of first instance  
(yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
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Case Number: T 1284/15 - 3.3.10

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.10**  
**of 23 January 2018**

**Appellant:** Mitsubishi Chemical Corporation  
(Applicant) 1-1, Marunouchi 1-chome  
Chiyoda-ku  
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**Representative:** Hoffmann Eitle  
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**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 30 January 2015  
refusing European patent application No.  
03700524.6 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman** P. Gryczka  
**Members:** R. Pérez Carlón  
T. Bokor

## Summary of Facts and Submissions

I. The appellant lodged an appeal against the decision of the examining division to refuse European patent application No. 03700524.6.

II. During the oral proceedings before the board of appeal (hereinafter board), which took place on 23 January 2018, the appellant filed a main request replacing all requests then pending. Claim 1 reads as follows:

*"A multitube reactor comprising a plurality of reaction tubes having a catalyst packed therein, and a shell equipped with the reaction tubes inside and into which a heat medium flowing outside the reaction tubes can be introduced, wherein the reaction tubes are selected from tubes having same nominal outside diameter and same nominal wall-thickness, an outside diameter tolerance of  $\pm 0.62\%$ , and a wall-thickness tolerance of  $+19\%$  to  $-0\%$ ."*

III. The examining division concluded that the term "nominal" in the features "nominal outside diameter" and "nominal wall-thickness" did not have any precise technical meaning.

Having regard to the applicant's interpretation of "nominal" in term of an order placed with a commercial tube manufacturer, the examining division concluded that the skilled person, assembling a shell and tube reactor using tubes with no available characteristics from the tube manufacturer, could not find out whether or not the reactor obtained would be according to claim 1. From this the examining division concluded that the claims lack clarity in the sense of Article 84 EPC.

IV. The arguments of the appellant relevant for the present decision were the following:

The feature "nominal" in claim 1 merely defined the reference point for the required tolerances. This may well coincide with a design value as a starting point in a manufacturing process, if the skilled person wants to carry out the invention. This was the sole technically sensible interpretation of the claim, and also the sole interpretation which was in accordance with the general teaching in the application.

Interpreting the term "nominal" in the usual way in engineering as the value of a placed order, or as the value given by the manufacturer as reference was not the intended technical meaning of "nominal" in the context of claim 1. The claimed reactor was not defined in any of those terms, these latter being values which may not be known to third persons. Rather, the claim required nominal diameter and wall thickness values which could be objectively determined, for example as an average (or extreme) of measured values.

Even if it were unknown to the skilled person what the ordered nominal values were for a given set of tubes, (such as the totality of the tubes within a multitube reactor), it would be possible to establish by measurements and calculation if a nominal, i.e. a reference value could be found for such a given set, where using this reference value the tubes would fall within the the claimed tolerance ranges. As a result, the skilled person would be in a position to establish if he was operating within or outside the scope of the claim.

The fact that both a symmetric and an asymmetric tolerance was given in the claim was unproblematic for the skilled person.

For this reasons, the features "nominal outside diameter" and "nominal wall-thickness" were clear for the skilled reader in the context of claim 1.

- V. The final requests of the appellant were that the decision under appeal be set aside and the case be remitted to the examining division for further prosecution on the basis of the main request filed (and amended) during the oral proceedings before the board, a description filed on entry into the regional phase before the EPO, with replacement pages filed with letter dated 15 May 2013, and figures as on file.
- VI. At the end of the oral proceedings, the decision was announced.

### **Reasons for the Decision**

- 1. The appeal is admissible.
- 2. Amendments
  - 2.1 Claims 1 to 3 find a basis in claims 1 to 3 as originally filed, respectively. Claim 4 finds a basis on claim 3 as filed, reworded as use claim.

The requirements of Article 123(2) EPC are thus fulfilled.

- 3. Clarity

3.1 Article 84 in conjunction with Rule 43(1) EPC stipulates that the claims must be clear and define the matter for which protection is sought in terms of the technical features of the invention. These requirements serve the purpose of ensuring that the public is not left in any doubt as to which subject-matter is covered by a particular claim and which is not (see T 337/95, OJ EPO 1996, 628, Reasons 2.2 to 2.5).

3.2 Claim 1 contains the features "nominal outside diameter" and "nominal wall-thickness".

The examining division concluded that these features rendered the claimed subject-matter unclear, as the usual meaning of the term "nominal" was "in name" or "theoretical", which conveyed no precise technical meaning.

3.3 Claim 1 requires reaction tubes having an outside diameter within a defined tolerance, and a wall-thickness within a defined tolerance. On the basis of the technical problem and the solution provided as explained in the application, the board holds that the terms "nominal outside diameter" and "nominal wall-thickness" merely define the value which serve as the reference value for these tolerances.

It is obvious that the required tubes are not meant to be characterised by their labelling, which could be arbitrary, or by the ordered specifications, i.e. by the wish of the buyer, while it is of course possible that these ordered specifications or labels will in fact coincide with the real physical values. The sole technically sensible reading of the claim is that the feature "nominal", as indicated above, relates to the reference value for the tolerances required by claim 1.

3.4 The board considers that the skilled person would have no problem with determining if any set of tubes (within a multitube reactor) falls within the scope of the claim, independently from the fact whether the tubes were manufactured directly by him or whether they were provided by someone else. The board concurs with the appellant that the skilled person would as a matter of routine measure the dimensions of the tubes and would be able to calculate if the measured values could be related to at least one nominal, i.e. reference value so that the measured, i.e. real tolerances would fall under the claim, or if no such nominal value can be found, because with any nominal value as reference the measured diameter and wall thickness values would necessarily result in tolerances outside the claim scope.

3.5 The board concludes for this reason that the features of the claimed reactor "nominal outside diameter" and "nominal wall-thickness" are clear, as required by Article 84 EPC.

#### 4. Remittal

The decision under appeal had only dealt with the issue of clarity, but had not examined other issues such as novelty or inventive step. Under these circumstances, the board considers it appropriate to grant the request of the appellant and to remit the case to the examining division for further prosecution (Article 111(1) EPC) on the basis of the claims of the main request.



## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance for further prosecution.

The Registrar:

The Chairman:



C. Rodríguez Rodríguez

P. Gryczka

Decision electronically authenticated