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**Datasheet for the decision
of 10 December 2008**

Case Number: T 0910/06 - 3.3.03

Application Number: 97926105.4

Publication Number: 0906342

IPC: C08F 4/10

Language of the proceedings: EN

Title of invention:

Polymerisation catalyst and process

Patentee:

Warwick Effect Polymers Limited

Opponent:

Carnegie Mellon University

Headword:

-

Relevant legal provisions:

EPC Art. 54, 88(2), 88(3), 88(4), 113(1), 123(2), 123(3)
Guidelines for Examination, Part E, Chapter III, Sections 8.7
and 9

Relevant legal provisions (EPC 1973):

EPC R. 67

Keyword:

"Novelty - yes"
"Priority - yes - elements in the priority document"
"Procedural violation - no"
"Remittal for further prosecution"

Decisions cited:

G 0009/91, G 0003/93, G 0004/95, G 0002/98, T 0615/95,
T 1239/03

Catchword:

See Reasons, 2 and 6.3.



Case Number: T 0910/06 - 3.3.03

DECISION
of the Technical Board of Appeal 3.3.03
of 10 December 2008

Appellant: Warwick Effect Polymers Limited
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office dated 29 March 2006 and
posted 13 April 2006 revoking European patent
No. 0906342 pursuant to Article 102(1) EPC.

Composition of the Board:

Chairman: R. Young
Members: M. C. Gordon
E. Dufrasne

Summary of Facts and Submissions

I. Mention of the grant of European Patent No. 0 906 342 with the title "Polymerisation Catalyst and Process" in the name of the University of Warwick, later Warwick Effect Polymers Limited in respect of European patent application No. 97926105.4, filed on 12 June 1997 as international application No. PCT/GB97/01589, published as WO-A-97/47661 on 18 December 1997, and claiming priority dates of:

12 June 1996 from GB 9612265.0 (hereinafter "PD1") and 7 April 1997 from GB 9707024.7 (hereinafter "PD2")

was announced on 17 October 2001 (Bulletin 2001/42) on the basis of 20 claims.

Claims 1 and 2 were independent claims and read as follows:

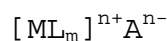
- "1. A catalyst for addition polymerisation of olefinically unsaturated monomers comprising:
- a) A first compound

MY

where: M is a transition metal in a low valency state or a transition metal in a low valency state co-ordinated to at least one co-ordinating non-charged ligand.

Y is a monovalent divalent or polyvalent counterion:

- b) An initiator compound comprising a homolytically cleavable bond with a halogen atom; and
 - c) An organodiimine, where at least one of the nitrogens of the diimine is not part of an aromatic ring.
2. A catalyst for addition polymerisation of olefinically unsaturated monomers comprising:
- d) A first component of Formula



where: M = a transition metal of low valency state

L = an organodiimine where at least one of the nitrogens of the diimine is not a part of an aromatic ring.

A = an anion

n = an integer of 1 to 3

m = an integer of 1 to 2, and

- e) An initiator compound comprising a homolytically cleavable bond with a halogen atom."

Claims 3-6 were dependent claims, directed to preferred embodiments of the organodiimines whereby claims 4 and 6 defined permissible substituent groups on the organodiimines of claim 3 and claims 3 to 5 respectively and read as follows:

"4. A catalyst according to claim 3 wherein R₁ to R₁₃ are selected from C₁ to C₂₀ alkyl, C₁ to C₂₀ hydroxyalkyl, C₁ to C₂₀ carboxyalkyl, n-propylisopropyl, n-butyl, sec-butyl, tert-butyl, cyclohexyl, 2-ethylhexyl, octyldecyl or lauryl."

"6. A catalyst according to claims 3 to 5 wherein one or more adjacent R₁ and R₃, R₃ and R₄, R₄ [sic] and R₂, R₁₀ and R₉, R₈ and R₉, R₈ and R₇, R₇ and R₆, R₆ and R₅ groups are selected from alkyl, cycloalkenyl, polycycloalkyl, polycycloalkenyl or cyclicaryl, [sic] containing 5 to 8 carbon atoms".

Claims 7-9 were dependent claims respectively directed to preferred embodiments of M, Y, and A.

Claims 10-12 were dependent claims directed to preferred embodiments of the initiator, whereby claim 10 was dependent on any previous claim and claims 11 and 12 were dependent on claims 10 and 11 respectively.

Claim 13 was an independent claim directed to the use of a catalyst according to any previous claim in the addition polymerisation of one or more olefinically unsaturated monomers.

Claims 14-18 were dependent claims directed to preferred embodiments of the use of claim 13 whereby:

- claims 14 and 15 specified the conditions of temperature;
- claim 16 specified the monomers;
- claims 17 and 18 specified the ratios of the catalyst components a), b) and c).

Claim 19, which was dependent on claims 13-16 was directed to the solvents to be employed and read as follows:

"The use of catalyst according to claims 13 to 16, where the polymerisation is undertaken in water, a protic or non-protic solvent".

Finally, claim 20 was an independent claim directed to the use of a catalyst according to claims 1 to 12 to produce polymers of various specified structural types.

II. A notice of opposition to the patent was filed on 15 July 2002 by the Carnegie Mellon University. The opposition grounds pursuant to Art. 100(a) EPC (lack of novelty, lack of inventive step) and Art. 100(b) EPC (insufficiency of disclosure) were invoked.

The notice of opposition cited 16 documents, *inter alia* D15: WO-A-96/30421.

During the course of the opposition procedure a number of further documents were cited, *inter alia*:

D64: Haddleton, D.M. *et al* "Monohydroxy terminally functionalised poly(methyl methacrylate) from atom transfer radical polymerisation", Chem. Commun., 1997, 683-684 together with an e-mail communication from the publisher dated 13 May 2005 stating that the article had been published on 7 April 1997.

D64 was cited by the opponent in a letter dated 22 July 2005.

III. By a decision announced at the conclusion of oral proceedings held on 29 March 2006 and issued in writing

on 13 April 2006 the opposition division revoked the patent.

The oral proceedings were not attended by the opponent, as had been announced in a letter dated 27 March 2006 in which the request for oral proceedings had been withdrawn.

The decision was based on a main request and first to fourth auxiliary requests filed with a letter of 26 January 2006 and fifth to ninth auxiliary requests filed during the oral proceedings.

Claim 1 of the main request read as follows, the additions compared to claim 1 as granted being indicated in **bold**, deletions by ~~striketrough~~:

"A catalyst for addition polymerisation of
olefinically unsaturated monomers comprising:
a) A first compound

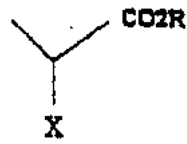
MY

where: M is a transition metal in a low valency state or a transition metal in a low valency state co-ordinated to at least one co-ordinating non-charged ligand.

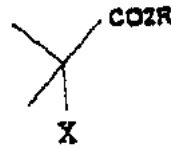
Y is a monovalent, divalent or polyvalent counterion:

b) An initiator compound ~~comprising a homolytically cleavable bond with a halogen atom; and~~ **selected from:**

RX formula 2



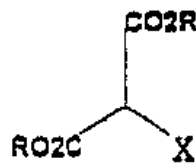
Formula 3



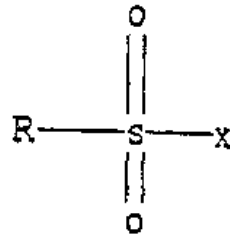
Formula 4



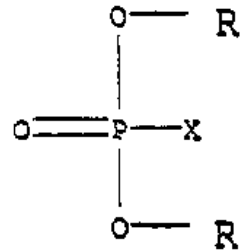
Formula 5



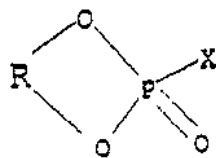
Formula 6



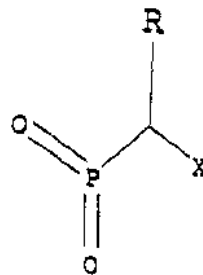
Formula 7



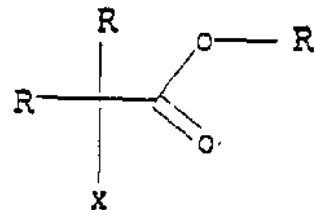
Formula 8



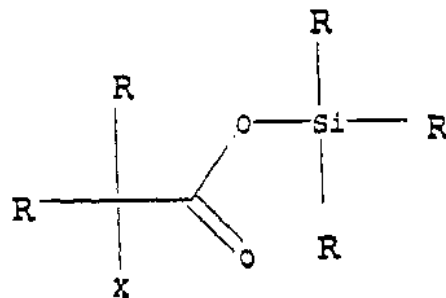
Formula 9



Formula 10



Formula 11



Formula 12

where R is independently selectable and is selected from straight chain alkyl, branched chain alkyl, cyclic alkyl, hydrogen, substituted alkyl, aryl and substituted aryl and substituted benzyl and wherein, for the initiators of Formula 2,

**Formula 3, Formula 4, Formula 5 and Formula 6,
X=Cl, Br, I and for initiators of Formula 7,
Formula 8, Formula 9, Formula 10, Formula 11 and
Formula 12, X=halide.**

- c) An organodiimine, where at least one of the nitrogens of the diimine is not part of an aromatic ring."

Claim 2 had been amended, compared to the granted version, analogously to claim 1.

Claim 3 corresponded to claim 3 as granted.

Claim 4 differed from claim 4 as granted in that the term "octyldecyl" had been amended to read "octyl, decyl" (see section I above).

Claim 5 corresponded to claim 5 as granted.

Claim 6 differed from claim 6 as granted in that the term "alkyl" had been replaced by "cycloalkyl" (see section I above).

Claims 7-9 corresponded to claims 7-9 as granted except that the lists of alternatives for the transition metal M and the anion A in claims 7 and 9 respectively had been restricted by deletion of certain members compared to the claims of the patent as granted.

As a result of the definition of the structures of the initiators in claim 1, claim 10 as granted had been deleted.

Accordingly claim 10 of the main request corresponded to claim 11 of the patent as granted, however amended to be dependent only on claim 1 or 2. Claims 11-16 of the main request corresponded to claims 12-17 as granted, with the dependencies being correspondingly amended.

The main request had no claim corresponding to claim 18 of the claims of the patent as granted.

Claim 17 of the main request read as follows, the additions and deletions compared to claim 19 as granted being indicated by **bold**) and ~~striketrough~~ respectively:

"The use of catalyst according to claims ~~13-16~~ **12 to 15**, where the polymerisation is undertaken in water, ~~a protic or non-protic solvent~~ **propionitrile, hexane, heptane dimethoxyethane, diethoxyethane, tetrahydrofuran, ethylacetate, diethylester, N,N-dimethylformamide, anisole, acetonitrile, toluene or xylene.**"

Claim 18 was identical to claim 20 as granted, with the dependencies appropriately modified.

The fifth auxiliary request differed from the main request in that:

- in claims 1 and 2 the permissible halogen (substituent X) for all initiators had been restricted to Cl, Br or I;
- claims 7 and 9, directed to preferred embodiments of M and A, had been deleted and the following claims renumbered and the

dependencies adapted.

(a) *Art. 123(2) EPC*

According to the decision the claims of the main request and of the 1st-4th and 6th-9th auxiliary requests did not meet the requirements of Art. 123(2) EPC since their subject matter was based on more than one selection from the originally filed application documents, i.e. on new combinations of features not supported by the originally filed application documents.

This objection was explained with respect to the main request as follows:

The combination in claims 1 and 2 of the main request of:

- initiator b) selected from Formulae 2, 3, 4, 5, and 6 with
- X=Cl, Br, I

was based on a combination of:

- a first arbitrary selection from claim 10 of the original application and
- a second arbitrary selection from line 10 of page 7 of the original application.

Analogous objections were raised in respect of claims 7 (defining permissible halogens and transition metals), 9 (defining permissible anions) and 17 (defining the solvents - see above) of the main request.

In particular with respect to claim 17 (recited above) it was objected that the subject matter, namely:

- i) an initiator selected from Formulae 2, 3, 4, 5 and 6 with
- ii) X=Cl, Br, I,
- iii) M selected from Cu(I), Fe(II), Co(II), Ru(II) and Ni(II),
- iv) A selected from Cl, Br, I, NO₃, SO₄ and CuX₂ (where X is halogen) and
- v) "water...or xylene"

was based on a combination of:

- a first arbitrary selection from claim 10;
- a second arbitrary selection from line 10 page 7;
- a third arbitrary selection from claim 7;
- a fourth arbitrary selection from claim 9 and
- a fifth arbitrary selection from lines 11-17 of page 19 (all of the original application).

The claims of the fifth auxiliary request were however held to meet the requirements of Art. 123(2) EPC (paragraph 3 of the reasons for the decision under appeal). According to the same paragraph of the reasons for the decision, the opposition division considered that the claims of the fifth auxiliary request met the requirements of Art. 84 EPC.

- (b) With respect to novelty it was held that D64 (see section II above) taught a combination of features

inside the scope of the claims of the fifth auxiliary request. Accordingly this document was considered to be relevant and was introduced into the proceedings pursuant to Art. 114(1) and (2) EPC.

- (c) With regard to priority it was held that a number of features of claims 1 and 2 of the fifth auxiliary request were not mentioned in either of the priority documents and accordingly that those parts of the claimed subject matter of the fifth auxiliary request did not benefit from either of the priority dates.

Among the features considered to be so affected were:

- "Y is divalent or polyvalent"
- Formula 11
- "where at least one of the nitrogens of the diimine is not part of an aromatic ring"
- "water" was not mentioned as a solvent.

- (d) D64 taught a catalyst for addition polymerisation of olefinically unsaturated monomers comprising a first component within the scope of feature a) of claim 1, an initiator compound selected from Formula 11 of feature b) of claim 1 and an organodiimine, where at least one of the nitrogens was not part of an aromatic ring.

Therefore parts of claim 1 that did not benefit from either of the priority dates lacked novelty over the teaching of D64.

Analogous objections were raised with respect to

the subject matter of claims 2, 7 and 11 of the fifth auxiliary request.

(e) Accordingly the patent was revoked.

IV. A notice of appeal against this decision was filed by the patent proprietor on 14 June 2006, the prescribed fee being paid on the same day.

V. The statement of grounds of appeal was filed on 18 August 2006.

(a) The statement of grounds of appeal was accompanied by sets of claims forming a main and a first, a second and a third auxiliary request. The main request was stated to be identical to the main request considered by the opposition division.

(b) It was requested that the appeal fee be refunded pursuant to R. 67 EPC 1973 because of a substantial procedural violation by the opposition division:

(i) The objection pursuant to Art. 123(2) EPC had been raised for the first time at the oral proceedings.

(ii) The minutes failed to record the fact that the patent proprietor had requested to know the basis for the objection.

(iii) The division had referred to "established case law" but did not, when asked, provide details thereof. Thus it was impossible to establish the reasoning behind the objection and hence difficult to overcome the objection.

(iv) It was further submitted that the minutes failed to reflect that when the oral

proceedings had been interrupted for the first time the patent proprietor prepared a set of auxiliary requests which addressed the objections, as far as they had been understood. It however became apparent that these did not meet the objections. After an attempt to satisfy the division a second opportunity was accorded to amend the requests after a further attempt at clarification by the division.

- (v) It was not until after this second attempt that it was clear to the patent proprietor that no amendment beyond restriction to a working example would satisfy the division. However the patent proprietor was not afforded a final opportunity to so amend the claims.
- (vi) The only decision which the patent proprietor had been able to find in the time allowed was T 615/95 (16 December 1997, not published in the OJ EPO), which, based on the information given in the publication "Case Law of the Boards of Appeal of the European Patent Office", 4th edition, 2001 page 201 appeared to support its position that the amendments did not add matter. The opposition division did not attempt to distinguish its objection from this decision nor fully to explain the basis for the objection.
- (vii) The decision failed to cite the "established case law" on which the decision had been based and even failed to refer to T 615/95. It was submitted that the inability or

unwillingness of the opposition division to explain the "established case law" first raised on the day of the oral proceedings was a substantial procedural violation. Thus the patent proprietor had been denied an opportunity properly to counter the objection of the opposition division.

(viii) Additionally the division had not allowed a further opportunity to amend the application once a decision had been reached on the relevance of D64 regarding novelty of the set of claims which had been found to meet the requirements of Art. 123(2) EPC. Contrary to the minutes the patent proprietor had not been informed that the second submission would be the final opportunity.

(c) With respect to the questions of added subject matter (Art. 123(2) EPC) in relation to the possibility of claiming multiple priorities (Art. 88(2) EPC) the arguments of the appellant may be summarised as follows.

The PCT application underlying the patent in suit contained subject matter not explicitly contained within the two priority documents.

Art. 88(2) EPC permitted multiple priorities in a patent application or patent and moreover in any one claim. Accordingly an applicant had the right to modify or develop the invention between the priority filing(s) and filing date of the application.

The explicit reference to multiple priorities in Art. 88(2) EPC had to mean that prior art - whether of the applicant or of a third party - published between the priority dates would not count as prior art against the subject matter in the priority documents and count as prior art only against any improvement not in the priority application. In the case that the improvements were deemed patentable with respect to such intervening prior art, the broadened claims should be accepted. If the improvements were not deemed patentable over the intervening prior art then it should be possible to amend back to the subject matter within the priority document.

It was also established case law that a claim having multiple priorities could be amended: a claim could have multiple priorities where it recited alternatives and hence could be split into two or more claims having different priority dates. It was also possible to delete alternatives which did not have entitlement to an earlier priority date.

The amendments proposed during the oral proceedings were in line with this case law.

Regarding the "established case law" referred to by the opposition division, the appellant referred to T 615/95 which related to amendments to generic formulae which produced inventions not in the application as originally filed by reciting an artificial combination of features showing an improvement over the prior art. This decision did

not deal with the question of whether it was permissible to delete alternatives to leave subject matter disclosed in the priority application in a focussed manner in order to avoid intervening prior art.

Further the amendments proposed were presented in the patent as a reduction in scope of the invention originally presented and did not change the nature of the invention. Hence, following T 615/95 the amendments ought to have been accepted as they merely shrank the generic group of chemical compounds originally claimed in the patent as granted.

T 615/95 provided for an objection of added subject matter in the situation where the selection of members of many lists resulted in a selection invention. The decision however did allow the patent applicant to restrict the scope of the claims without violating Art. 123(2) EPC.

It was further submitted that the various alternatives encompassed by the granted claim could instead have been presented in a plurality of separate claims, each having a different status with respect to priority. Had the claims been drafted in this manner the objection of added subject matter would not have arisen. This demonstrated the objection giving rise to the revocation arose due to a mere drafting formality.

- (d) With regard to the entitlement to priority it was submitted that the findings of G 3/93 (OJ EPO 1995,

018) did not apply. The decision referred to elements in the claim and considered the case of an intervening publication, i.e. published within the priority interval. Such a document was citable as prior art against elements of the European patent application which were not entitled to priority.

In particular this decision did not state that the entire claim lost its priority when it contained an element which did not find priority.

- (e) The approach of the opposition division was inconsistent with the findings of G 3/93. The initiators disclosed in D64 were disclosed in PD2. Hence these were entitled to their priority and [the disclosure thereof in D64] did not anticipate the claimed invention. D64 was therefore only citable as prior art against elements not in the priority documents.

Similarly the organodiimines of D64 were explicitly disclosed in the priority documents with the result that D64 was not prior art for this element of claims 1 and 2.

Similarly with respect to component d) of claim 2, D64 disclosed only $m=2$ and $n=1$ which had a basis in both priority documents.

D64 did not anticipate or suggest $m=1$ or $n=2$ or 3.

- (f) Arguments were also presented with respect to the first, second and third auxiliary requests.

Further submissions were made with respect to Art. 56 EPC.

These further arguments and submissions are however not of relevance for the present decision.

VI. The respondent did not file a substantive response to the statement of grounds of appeal.

VII. On 17 September 2008 the Board issued a summons to attend oral proceedings.

The summons was accompanied by a communication in which the preliminary, provisional position of the Board was set out.

It was considered that an objection of added subject matter (Art. 123(2) EPC) did not arise with respect to the claims of the main request.

However, objections in respect of certain amendments to claims 4 and 17 was raised pursuant to R. 80 EPC and R. 139 EPC respectively, which amendments were noted in section III above.

It was also provisionally held that reimbursement of the appeal fee could not be allowed.

VIII. The respondent in letters dated 3, 12 and 18 November 2008 requested postponement of the oral proceedings citing *inter alia* pressure of work. This request was resisted by the appellant in a letter dated 7 November 2008 and refused in communications of the Board dated 11, 13 and 19 November 2008 in particular because the

justifications given did not constitute serious substantive reasons as set out in the Notice of the Vice-Presidents DG2 and 3 dated 1 September 2000 concerning oral proceedings before the EPO (OJ EPO 10/2000, 456).

- IX. With a letter dated 10 November 2008 the appellant submitted sets of claims forming revised main and first to third auxiliary requests as well as a set of claims forming a newly filed fourth auxiliary request. Amendments had been made to the claims of the main and first, second and third auxiliary requests to take account of the objections of the Board to claims 4 and 17 (see section VII above).

The appellant also announced that Professor David Haddleton, the Inventor, would attend the oral proceedings. It was requested that he be allowed to speak at the oral proceedings "should a matter of a technical nature need clarifying".

- X. The respondent, in the aforementioned letter of 18 November 2008 also made submissions regarding the formal admissibility of the newly filed sets of claims. It was requested that these sets of claims not be admitted to the proceedings in particular since they were not clearly admissible, reference being made to Art. 10(b) of the [old] Rules of Procedure of the Boards of Appeal - corresponding to Art. 13(1) of the version which entered to force together with the revised version of the EPC ("EPC 2000") (OJ EPO 2007, 536).

It was also requested that Professor Haddleton not be allowed to present oral testimony. The appellant had not stated on which technical issues Professor Haddleton would comment. This put the respondent at a fundamental disadvantage.

XI. In a further submission dated 26 November 2008 the respondent submitted the following document:

D69: Organic Chemistry, K. Peter C. Vollhardt, 1987, page 82.

(a) The request to find all claim requests inadmissible was reiterated. It was also requested that the appellant (patent proprietor) not be afforded any further opportunity to submit further claim requests.

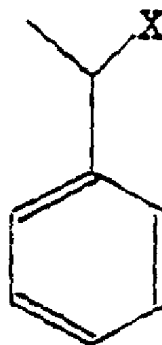
(b) An objection was raised pursuant to Art. 123(3) EPC in respect of claims 1 and 2 of the main request.

It was submitted that as granted claim 1 had been limited to an initiator containing a "homolytically cleavable bond with a halogen atom" (see section I above). The main request was limited to an initiator selected from a defined group of compounds. However the requirement for a homolytically cleavable bond with a halogen atom was no longer present.

Bonds could be either homolytically or heterolytically cleavable, reference being made to D69. It was not inevitable that any of the bonds disclosed in the initiator formulae of the main request would be a homolytically cleavable bond as this would depend on the type of halogen atom bonded to the group and the nature of the R-group substituents which would push or pull electron

density onto or away from the C-Halide bond.

- (c) It was stated that the previous objections pursuant to Art. 123(2) EPC in respect of the main request were maintained.
- (d) A further objection pursuant to Art. 123(2) EPC was raised with respect to the definition of the initiator compound in which X had been limited to Cl, Br, I, *inter alia* for the compound of Formula 5:



This had only a single variable - X. Thus while in the application as filed X was defined as halide, Formula 5 in claims 1 and 2 of the main request now disclosed three specific compounds.

- (e) An objection pursuant to Art. 123(2) EPC was also raised in respect of claim 17 of the main request. As filed claim 19 had been limited to "water, a protic or non-protic solvent" (emphasis of the respondent). This wording had also been present in claim 19 as granted. However claim 17 of the main request was limited to a number of compounds, none of which was referred to as solvents. Whilst these might act as solvents for some specific compounds, the compounds defined in the claims on which claim 17 was dependent were unspecified, i.e.

generic compounds. Given the breadth of these claims it was inevitable that some or all of the compounds defined in claim 17 would not act as a solvent therefor. Thus due to the deletion of the "solvent" functional requirement claim 17 no longer met the requirements of Art. 123(2) EPC.

(f) An objection pursuant to R. 80 EPC was raised with respect to claim 6 of the main request. Granted claim 6 had contained the term "alkyl" whereas the amended version of the main request claim 6 contained "cycloalkyl", which amendment did not appear to be occasioned by a ground of opposition (see also section III above).

(g) Analogous submissions were also made with respect to the auxiliary requests, which submissions are however not relevant for the present decision.

XII. Oral proceedings were held before the Board on 10 December 2008.

(a) *Alleged procedural violation - request for refund of the appeal fee*

The appellant submitted that this request was based on two aspects:

- that insufficient time had been given to consider the objection under Art. 123(2) EPC which had been raised for the first time at the oral proceedings before the opposition division;
- that the nature of the objection had been insufficiently explained, in particular with respect to the case law relied upon.

With respect to the first of these aspects it was submitted that the objection had been raised for the first time at the oral proceedings and had been "bundled through" without affording the patent proprietor sufficient time to consider and prepare a response to this.

With regard to the second aspect it was submitted that the opposition division had failed to make the nature of the objection and the case law relied upon clear. The Division had also failed to explain why the decision cited by the patent proprietor during the oral proceedings - T 615/95 (see section V.(b).(vi) above) - was considered not to apply.

No explanation beyond a reference to non-identified "established case law" had been provided by the opposition division. The patent proprietor attempted to prepare a response, which was rejected by the Opposition Division. This indicated that the objection had not been correctly understood.

The opposition division had not explained the reasoning sufficiently with the consequence that the patent proprietor was not in a position to understand and deal with it. In particular it was not understood why the opposition division had considered these "multiple selections" (see section III.(a) above) to contravene the requirements of Art. 123(2) EPC with reference to the principles developed in T 615/95.

The appellant emphasised that it was not disputed

that the Opposition division had been entitled to raise an objection pursuant to Art. 123(2) EPC at the oral proceedings and similarly it was explicitly acknowledged that the instances of the EPO were not governed or constrained by the case law of the Boards of Appeal apart from that of the Enlarged Board. However since the opposition division had invoked case law it should have identified precisely which decisions were being considered.

After an interruption of the oral proceedings for deliberation the Board announced the decision that the request for refund of the appeal fee was refused.

- (b) *Requests to be considered at the oral proceedings.* The respondent maintained the objection to the introduction of the most recently filed main and first-third auxiliary requests (see sections X and XI.(a) above). The fourth auxiliary request was submitted to be an abuse of procedure since it was not in response to either a communication of the Board or a submission of the respondent.

The appellant submitted that the amendments made to the main and first-third auxiliary requests were minor compared to the sets of claims submitted with the statement of grounds of appeal and were in response to the matters raised in the communication of the Board which accompanied the summons to attend oral proceedings.

After an interruption of the oral proceedings for deliberation the Board announced the decision that the main request and first to third auxiliary requests filed with the letter of the appellant dated 10 November 2008 were admitted to the proceedings. No decision was taken with respect to the fourth auxiliary request.

The Board however indicated that there were a number of objections pursuant to R. 80 EPC with respect to the claims of the main request, namely (see also section III above):

- in claim 1 a comma had been inserted between "monovalent" and "divalent"
- in claim 6 the term "cycloalkyl" had been introduced instead of "alkyl".

The appellant indicated that it was prepared to make amendments to address these issues. It was also proposed to amend claim 17 (see section III above) to reinstate the wording of claim 19 as granted (see section I above) in order to address the objection raised by the respondent in the letter of 26 November 2008 (see section XI.(e) above).

The Board noted the statement of intent of the appellant but proposed that submission of any further sets of claims be deferred pending discussion of other matters.

(c) *Art. 123(3) EPC - homolytically cleavable*

The respondent reiterated the objection - raised

in the letter of 26 November 2008 (See section XI.(b) above) - that whilst claims 1 and 2 as granted specified that the initiator b) was a compound comprising a homolytically cleavable bond with a halogen atom this feature had been deleted from claims 1 and 2 of the main request. It was not certain that all of the compounds listed would have a homolytically cleavable bond since this depended on the nature of the substituents X and R. The fundamental point was that these compounds were not spontaneously homolytically cleavable, reference being made to the compound HCl which fell within the scope of the formula specified. In water this compound underwent heterolytic cleavage. This demonstrated that the objection did not assume extreme conditions. The question of whether a compound was homolytically cleavable was not an intrinsic feature but depended on the environment in which the compound was, e.g. temperature, light, presence of other reagents. Accordingly claims 1 and 2 now also covered compounds which could undergo heterolytic cleavage. In view of the vast range of alternatives for the substituents X and R, it was impossible that all compounds covered would undergo homolytic cleavage. Reference was made to D69 (See section XI.(b) above).

The appellant submitted that the submissions of the respondent:

- that original claims 1 and 2 required that the initiator be spontaneously homolytically cleavable and
- that none of the compounds of claims 1 and 2 could be cleaved homolytically

were incorrect. D69 showed, by reporting the bond strengths (dissociation energies) that bonds could be broken in either of the two modes.

Similarly the position that C-X bonds were not homolytically cleavable was not supported by the facts. The formulae specified in operative claims 1 and 2 were originally present in claim 10 as filed, which was dependent on originally filed claims 1 and 2 and so contained the feature that the bonds were homolytically cleavable. It was emphasised that all bonds had the capability of being homolytically cleaved. This was a matter of fact - there were circumstances under which the bonds could be homolytically cleaved, e.g. in the circumstances where the catalyst composition was used. This property did not apply to extremes but to the general case of use of the catalyst. Similarly simply because - theoretically - unrealistic, extreme conditions might be found in which for one of the compounds homolytic cleavage did not occur would not invalidate the claim. It was submitted that the correct construction of the claim was not to consider the initiators in isolation of the other features of the claim but rather to take account of the other components of the catalyst system present, i.e. that in the case of the use of the catalyst as claimed the bond would be homolytically cleavable.

It was submitted that this issue, which had been raised only 2 weeks before the oral proceedings by the respondent, could be settled either by reference to D69 or by allowing the Inventor,

Professor Haddleton to address the Board.

The request to hear Professor Haddleton was resisted by the respondent due to the late announcement and the fact that the respondent did not have a technical expert present.

While the request in the respondent's letter of 18 November 2008 that Professor Haddleton not be allowed to speak had up to this point been respected by the Board, which had accordingly refrained from inviting Professor Haddleton to speak, the appellant emphasised that the objection pursuant to Art. 123(3) EPC had been raised only 2 weeks before the oral proceedings by the respondent and it was with respect to this point that it was now requested that Professor Haddleton be permitted to speak. It was further considered that under these circumstances it was inappropriate to refer to the findings of G 4/95 (OJ EPO 1996, 412) regarding submissions by accompanying persons.

Following an interruption for deliberation the Board informed the parties that it was prepared to hear the technical expert and Inventor, Professor Haddleton solely on the question of the absence of the feature "homolytically cleavable" with respect to Art. 123(3) EPC.

The Inventor submitted that the definition in D69 of homolytic cleavage was correct. He submitted that although none of the initiator compounds b) would undergo homolytic cleavage spontaneously,

under the conditions set out in the claims of the main request, i.e. the combination of:

- ligand with anion,
- the diimine and
- the initiator

the resulting electronic environment would permit homolytic cleavage and thus the C-X bond would be "homolytically cleavable".

As an illustration of this, reference was made to the initiator of Formula 3 (see section III above). This would not be cleaved in toluene on its own. However upon exposure to the other components of the catalyst system as specified in claims 1 and 2 this compound would undergo homolytic cleavage.

Although the precise mechanism which drove the homolytic cleavage was still a matter of debate, it was established that upon combining the components of the catalyst homolytic cleavage did occur. The step of homolytic cleavage was central to the polymerisation mechanism promoted by the claimed catalysts. Homolytic cleavage also occurred in the absence of the monomer. In response to objections of the respondent that all the examples:

- employed elevated temperature and
- liquid state

which features were absent from claims 1 and 2 the Inventor submitted that homolytic cleavage occurred when the components of the catalyst system were combined and further that the reaction

could be carried out in either the liquid or the solid state.

Following an interruption of the oral proceedings for deliberation the Board announced the decision that the claims of the main request met the requirements of Art. 123(3) EPC.

(d) *Art. 123(2) EPC*

The respondent referred to the objections raised with respect to Formula 5 of claims 1 and 2 in the letter of 26 November 2008 (see section XI.(d) above). It was reiterated that the effect of the amended definition of X being Cl, Br or I was to specify three specific compounds whereas the application as originally filed had defined this as having generically "Hal" as the substituent. These specific compounds were not disclosed in the application as originally filed and a selection from 2 lists was required to generate this subject matter.

The appellant referred again to T 615/95. This considered two situations - one in which a new - and not previously disclosed - combination of features was assembled as a result of the amendments made. This contrasted with the situation in the present case where the claims of the application as filed disclosed the various components of the invention as each being selectable from a list of alternatives - all of which had been disclosed. A number of these alternatives had now been deleted. Such deletion of separately disclosed alternatives did not

contravene Art. 123(2) EPC.

This had been recognised in T 615/95, which was particularly applicable to the method of claiming adopted in the patent in suit.

There could thus be no objection arising from the deletion of some of these alternative embodiments, since this resulted merely in a restriction of the available options compared to the application as originally filed. With respect to formula 5 specifically it was submitted that compared to the claims as originally filed one alternative had been deleted - i.e. the size of the originally disclosed group - Hal (Cl, F, Br, I) had been shrunk by one.

The various alternatives could have all been presented in separate claims, deletion of one of which would not have given rise to the objection now being discussed.

The respondent submitted that it was necessary to distinguish between disclosure and coverage. Whilst it was conceded that all the various alternatives had been **covered** by the claims as originally filed, it was disputed that these had been **disclosed** or **individualised** (emphasis of the Board). The claim as now amended represented a selection from the original claim and so it might be possible to claim a novel and inventive selection based on this restriction.

After an interruption for deliberation the Board informed the parties of its decision that claims 1 and 2 of the main request met the requirements of Art. 123(2) EPC.

(e) *Submission of new main request*

The appellant, as earlier proposed, now submitted a revised main request, in which claims 1, 6 and 17 had been further amended to take account of the objections raised by the Board and the respondent, (see section XII.(b) above).

(f) *Novelty, entitlement to priority*

In the introductory comments the Board emphasised that the issue was not whether the claims contained subject matter not explicitly found in either of the priority documents - which had not been disputed by the appellant in the Statement of Grounds of Appeal (See section V.(c), 2nd paragraph above). The appellant confirmed that this was the situation with respect to priority.

Rather the question was whether there was subject matter disclosed in the prior art - in particular D64 which was within the scope of the operative claims yet was not disclosed in the priority documents, in particular PD2, the filing date of which was the same as the publication date of D64.

The respondent submitted that D64 disclosed a specific example, i.e. specific compound, solvent and initiator. With reference to the findings of G 2/98 (OJ EPO 2001, 413), in particular Reasons 6.3-6.7 it was submitted that this was an "AND" claim. The operative claim was of broader scope than the disclosure of the priority document. In this respect it was irrelevant that the priority document disclosed a specific compound. It was on

the contrary necessary that all features of the claim were to be found in the priority document which was not the case.

It was submitted that while in the priority document the example, starting on page 24 with reference to Formula XII related to n-propyl pyridine carbaldehyde, i.e. was restricted to a single propyl isomer the disclosure of D64 was not restricted to a single isomer and therefore covered both possible isomers (n- and isopropyl).

The appellant submitted that the respondent had failed to establish that the operative claims encompassed subject matter which, while being disclosed in D64 was not in the priority document PD2. The claims were not of the "AND" type referred to in G 2/98 *supra* but had also an OR element. Specifically the claim related to a combination of three features, i.e. an AND part (metal/ligand, initiator, diimine) each of which could be selected from a number of alternatives (OR part) (see also section V.(c) and section XII.(d) above).

The findings of G 2/98 and also of the earlier decision G 3/93 cited *supra* related only to the AND scenario. In the case of the OR scenario each embodiment could have a separate priority date.

The subject matter common to D64 and the operative claims was entirely disclosed in the priority document.

It was conceded by the appellant that the disclosure of D64 might be citable under inventive

step against subject matter of the operative claims which was not entitled to claim priority from PD2 but this aspect was not part of the current appeal proceedings.

The Board observed that the disclosure of D64 which was under discussion was in the nature of a specific example, which was to be contrasted with a written disclosure listing permissible components. The absence of a precise specification of the propyl isomer employed meant that the disclosure of the example was incomplete, and not unambiguous.

The respondent sought to enter into a discussion of lack of novelty with respect to the disclosure of D15, reference being made to submissions in the Notice of Opposition.

The Board noted that this matter had not previously been raised in the appeal proceedings, and recalled that the respondent had not availed itself of the possibility to submit a reply to the statement of grounds of appeal. It was therefore considered not to be appropriate to raise this issue for the first time at this advanced stage of the appeal proceedings.

After an interruption of the oral proceedings for deliberation the Board announced its decision that the subject matter of the claims of the main request was novel.

(g) *Next stage*

Both parties indicated that they wished to have the case remitted to the first instance for consideration of inventive step.

XIII. The appellant (patent proprietor) requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request (claims 1 to 18) filed during the oral proceedings or, in the alternative, on the basis of one of the auxiliary requests 1 to 4, all filed with the letter dated 10 November 2008. He also requested that the appeal fee be reimbursed.

The respondent (opponent) requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

2. *Request for refund of the appeal fee*

The request for the refund of the appeal fee related to the manner in which the opposition division had dealt with the matter of Art. 123(2) EPC.

As reported in section XII.(a) above this request was based on two aspects, namely that on the occasion of the oral proceedings before the opposition division:

- insufficient time had been given to consider this objection;

- the nature of the objection had been insufficiently explained, in particular with respect to the case law relied upon.

2.1 Regarding the objection of the appellant that insufficient time had been accorded at the oral proceedings before the opposition division (see sections V.(b).(viii) and XII.(a) above) it is conspicuous to the Board that the report of the oral proceedings before the opposition division as presented by the appellant during the oral proceedings to the Board (see section XII.(a)) above is inconsistent with that contained in the minutes of that oral proceedings prepared by the opposition division.

2.1.1 The minutes of the oral proceedings record on page 1 that the opposition division informed the parties that "several selections had to be made from the content of the application as originally filed in order to obtain the subject-matter of the main request". It is also recorded that the patent proprietor acknowledged that deletions from several lists were necessary and submitted that this was not contrary to the EPC and to the findings of decision T 615/95.

2.1.2 It is further recorded in the minutes that following the announcement of the (provisional) view of the opposition division that the main request and 1st-4th auxiliary requests did not comply with the requirements of Art. 123(2) EPC there was a break of 30 minutes to accord the proprietor the opportunity to prepare its case in view of the objection pursuant to Art. 123(2) EPC raised by the opposition division. It is recorded that the patent proprietor accepted this time, i.e. 30 minutes to be enough.

- 2.1.3 After this break the compliance of the main request with the provisions of Art. 123(2) EPC was discussed. Following this discussion the opposition division announced that the main request violated the requirements of Art. 123(2) EPC. It is recorded that "The Proprietor did not wish to add further arguments concerning the remaining auxiliary requests", whereupon the opposition division announced that the 1st-4th auxiliary requests did not comply with the requirements of Art. 123(2) EPC.
- 2.1.4 The minutes record (page 2, 6th and 7th paragraphs) that there was then a further break - 1 hour 15 minutes - "to give to the Proprietor the opportunity to make use of his right to once file further requests". Upon resuming the oral proceedings five sets of claims were submitted (Annexes 1-5 to the minutes), i.e. the aforementioned 5th-9th auxiliary requests.
- 2.2 Consequently it appears from the minutes that, far from being "bundled through" the opposition division allowed two breaks for the appellant to consider the objections made under Art. 123(2) EPC and formulate amended sets of claims to take account of these objections. The first break was for 30 minutes, which is recorded as having been accepted by the patent proprietor as enough, and the second break was for 1 hour and 15 minutes.
- 2.3 While the submissions of the appellant allege one inaccuracy in the minutes in relation to the time allowed to the appellant, this concerns only the allegation that the opposition division did not warn the patent proprietor that the second opportunity to

amend would be the last. In particular the part of the minutes relating to the breaks given, their duration and the fact that the first such break had been accepted by the patent proprietor as being enough were not challenged in proceedings before the Board.

Thus whilst the appellant may in retrospect have come subjectively to the conclusion that not enough time had been allowed for meeting the objections, this impression is not confirmed by the objective, unchallenged statements in the minutes.

2.4 As regards the alleged failure to warn the patent proprietor that the second opportunity was the last, it has to be said that, in *inter partes* proceedings even if an objection under Art. 123(2) EPC has been raised for the first time at the oral proceedings, one attempt to meet the objection would normally be expected to be enough. In the case in point it is conspicuous from the minutes that a second opportunity to amend - with a break lasting more than twice the length of the first break - was given by the opposition division. Under these circumstances, the Board is unable to discern any reason for the apparent expectation of the appellant of a third opportunity, the granting of which in *inter partes* proceedings could in any case have been associated with the risk of being perceived by the opponent as unduly assisting the patent proprietor. Consequently the Board is unable to recognise a procedural violation in this respect.

2.5 With regard to the second aspect (explanation of the objection), it does not appear to be contended that in raising the objection the opposition division failed to

identify the ground of the objection invoked (Art. 123(2) EPC), the passage concerned (claims 1 and 2) or the nature of the alleged contravention (several selections). It has likewise not been alleged, let alone proven that the opposition division referred to law with which the patent proprietor was not familiar. On the contrary the complaint of the appellant appears to be that the opposition division did not explain in sufficient detail the reasons for maintaining its objection.

The relevant procedural requirement of Art. 113(1) EPC is, however, only that the decisions of the European Patent Office may only be based on grounds or evidence on which the parties concerned have had an opportunity to present their comments. There is no allegation, let alone proof, that the opposition division refused to hear the comments of the patent proprietor.

In any case the Board notes that both in the oral proceedings and in the decision (see section III.(a) above) the reason given by the opposition division for the finding of non-compliance with the requirements of Art. 123(2) EPC was that "several selections had to be made" (minutes) or that "more than one selection" and "arbitrary selections" (two thereof) had to be made (decision).

The minutes and the decision are consistent in this respect. It is true that the decision contains a greater level of detail than was communicated to the parties at the oral proceedings, i.e. in that the sections of the original disclosure from which selections were to be made are identified. However this is to be expected.

According to Part E, Chapter III, Section 8.7 of the Guidelines for Examination it is required that at the Oral Proceedings the matters are to be discussed. There is no reference here to the **reasoning**. On the contrary this is referred to in Part E, Chapter III Section 9 of the Guidelines as being part of the written decision. It is furthermore explicitly stated in this Section of the Guidelines that on the occasion of the oral proceedings, there is no need to make any pronouncement on the reasons for the decision.

- 2.6 The argument of the appellant/patent proprietor that it was consequently not able to address the objections so raised is not convincing in the light of the fact that it was actually able to propose a set of claims which, while not being limited to a working example (see section V.(b).(v) above), did satisfy the opposition division as to the requirements of Art. 123(2) EPC, i.e. the fifth auxiliary request.
- 2.7 Accordingly this part of the second aspect of the appellants argument, namely that the opposition division failed to explain its objection cannot succeed.
- 2.8 To the extent that the absence in the decision under appeal of any reference to the "established case law" referred to by the opposition division or even to decision T 615/95, invoked by the appellant (see section V, in particular subsections (b).(iii), (vi) and (vii) thereof and section XII.(a) above) is seen in itself by the appellant as a "substantial procedural violation" it must be recalled that unlike some Anglo-Saxon legal systems which are precedent driven, the instances of the European Patent Organisation work

within a codified system of law, i.e. the European Patent Convention and its implementing regulations, and are constrained by case law only in the case of decisions handed down by the Enlarged Board of Appeal. Further the *ratio decidendi* of a decision of a Board of appeal is only binding, in the case of remittal, on the department whose decision was appealed in so far as the facts are the same (Art. 111(2) EPC).

It is furthermore clear to the Board from the statement in part 2.3 of the reasons of the decision under appeal that a "more complete summing up of all other unsupported combinations of features claimed in the various requests is not necessary" that the opposition division did not see any reason to go into further detail, e.g. into particular case law in order to justify its refusal of the main request and the first to fourth auxiliary requests.

2.9 The argument of the appellant concerning the absence of any reference in the decision under appeal to T 615/95, to the extent that it can be understood as being regarded by the appellant as a failure to take account of an important argument of a losing party in this respect, is not convincing for the following reasons:

2.9.1 The burden of proof in demonstrating that an amendment does not add subject-matter lies with the party making the amendment, here the appellant (by analogy with section 3.3.3 of the reasons of T 1239/03 of 2 November 2006, not published in the OJ EPO).

Consequently the task of explaining the relationship of the findings of T 615/95 to allowability of the proposed amendments lay with the patent proprietor and

not with the opposition division.

Therefore the apparent demand of the Appellant that the opposition division "fully explain the basis" for the objection (statement of grounds of appeal, page 2, 5th paragraph) as a condition of recognising procedural propriety is misplaced.

2.9.2 Nor can the subsequent explanation in the statement of grounds of appeal of the reasons why, in the appellant's opinion, the amendments should be regarded as conforming to the requirements of Art. 123(2) EPC, even if ultimately found to be convincing by the Board, justify a finding that a substantial procedural violation had occurred before the opposition division.

2.10 The Board therefore comes to the conclusion that the opposition division did not commit a substantial procedural violation in their treatment of the aspect of Art. 123(2) EPC in the present case.

2.11 Accordingly the request for refund of the appeal fee is refused.

3. *Requests to be considered at the oral proceedings*
The main request and first, second and third auxiliary requests submitted with the letter of 10 November 2008 (see section IX above) differed from the requests of equal number submitted together with the statement of grounds of appeal only in respect of amendments to claims 4 and 17 of the main request (and the corresponding claims of the auxiliary requests) made in order to address matters raised by the Board in its communication of 17 September 2008 (see section VII above).

These amendments did not give rise to new subject matter nor was it argued, let alone shown, that the amendment raised substantive issues not hitherto considered in these proceedings.

Accordingly the sets of claims forming the main and first, second and third auxiliary requests submitted with the letter of the appellant dated 10 November 2008 were admitted to the proceedings.

The further amendments made to the claims of the main request at the oral proceedings before the Board were in order to address objections raised by the Board at the oral proceedings in respect of the main request submitted with the letter of 10 November 2008 (see sections XII.(b) and (e) above).

These amendments did not go beyond what was necessary to address said objections, and the request as amended accordingly was admitted to the proceedings.

No decision needs to be taken regarding the admissibility of the fourth auxiliary request submitted on 10 November 2008.

4. *Art. 123(2) EPC*

- 4.1 The text of claim 1 of the main request as submitted at the oral proceedings before the Board differs from that reproduced in section III above by deletion of the comma between the terms "monovalent" and "divalent" as noted in section XII.(e) above.

4.2 Features a) and c) of this claim are identical to features a) and c) of claim 1 as originally filed.

4.3 The subject matter of feature b) of operative claim 1 is derived from claim 10 as originally filed.

Specifically:

- Claim 10 as originally filed discloses all the Formulae 2-12 specified in operative claim 1;
- Compared to claim 10 as originally filed two members of the group of residues from which the group R can be selected have been deleted, namely hydroxyalkyl and carboxyalkyl;
- Claim 10 as originally filed specified that the residue X was "Hal" for all of Formulae 2-12. In operative claim 1 however the residue X is defined as follows:
 - For the initiators of Formula 2, Formula 3, Formula 4, Formula 5 and Formula 6 X=Cl, Br, I;
 - For the remaining initiators, i.e. those of Formula 7, Formula 8, Formula 9, Formula 10, Formula 11 and Formula 12 X=halide.

4.4 As has been previously recognised, for example in section 4.3 of the reasons of the decision T 615/95 cited by the appellant there are situations where a limitation of the scope of a claim may generate novel subject matter which is not disclosed in or not derivable from the application as filed. However a limitation will not necessarily result in novel subject matter, i.e. which is different from that as originally disclosed. For example a limitation may merely exclude protection for a part of the subject matter disclosed and claimed in the application as filed.

4.5 Thus for each of the limitations made in claim 1 compared to the original disclosure it will have to be examined whether this results in subject matter which is neither disclosed in nor derivable from the original application.

4.5.1 The first limitation to be considered is the deletion of two of the possible members of the substituent R (see section 4.3 second indent above).

The effect of this deletion appears to be to restrict the group of permissible alternatives from which the group R may be selected, i.e. to shrink the scope of this feature.

The remaining members of the group of residue R, specified in claim 10 as originally filed, are retained. The Board is however aware that both of the deleted variants of the group R (hydroxyalkyl and carboxyalkyl) are in any case encompassed by the term "substituted alkyl".

Accordingly this deletion does not exclude any particular embodiment(s) from the scope of the claim and accordingly does not result in any amendment of the scope of the claim compared to that of claim 10 as originally filed, which claim was dependent on any previous claim.

As a consequence this amendment does not give rise to an objection pursuant to Art. 123(2) EPC.

4.5.2 The second limitation to be considered is the restriction of the permissible halogens for initiators of Formulae 2-6 to Cl, Br and I (see section 4.3, third indent above).

Original claim 10 specified generically "X = a halide". The term "halide" denotes the residues derived from the

elements present in group VII (also known as group 17) of the Periodic Table, namely F, Cl, Br, I and At. According to page 7, line 10 of the application as filed the halide is "especially" I, Br, F or Cl. Accordingly the disclosure of the application as filed with respect to "halide" was restricted to 4 (or 5) specific elements, which restriction arises not only from the disclosure at page 7 line 10 but in any case in view of the meaning which the skilled person would understand by the term "halide". This group has now been further restricted to 3 of the disclosed elements thereof for one group of initiators. Accordingly the scope of this aspect of operative claim 1 has been restricted as compared to that of claim 10 as originally filed, which restriction is based on features explicitly disclosed in the application as filed.

The respondent objected that the effect of this restriction with respect to the initiators of formula 5 would be a disclosure of specific compounds which had not previously been individualised (see section XII.(d) above). It is true that in claim 10 as originally filed the residue X of Formula 5 was defined generically as "halide". However, as explained above this term, by reference to page 7 line 10 of the application as filed as well as to the knowledge of the skilled person inevitably and unambiguously disclosed a defined, closed set of alternative embodiments. Accordingly also the disclosure of Formula 5 in claim 10 of the application as filed constituted a disclosure of a restricted set of specific compounds. This set has now been further shrunk to a subset of 3 thereof.

Accordingly the number of alternatives covered by Formula 5 has simply been restricted to disclosed embodiments thereof compared to the disclosure in the application as filed.

4.5.3 The remainder of the formulae for the initiator (Formula 7 to Formula 12) are defined identically as in the application as filed, i.e. with X being generically "halide". Accordingly there has been no change in scope (restriction or extension) compared to the application as originally filed with respect to these initiators.

4.6 It follows from the above that the effect of the changes made in operative claim 1 compared to the application as filed is to reduce the range of alternatives for certain of the features of the claim. However the restrictions made do not result in the generation of combinations of subject matter, or to the disclosure of single compounds, which were not disclosed in the application as filed.

Accordingly it is concluded that claim 1 does not contain subject matter extending beyond the content of the application as filed.

4.7 The above considerations with respect to claim 1 apply *mutatis mutandis* to claim 2.

4.8 No other objections have been raised pursuant to Art. 123(2) EPC in respect of the main request. Nor has the Board any objections of its own in this respect.

4.9 It is therefore decided that the claims of the main request meet the requirements of Art. 123(2) EPC.

5. *Art. 123(3) EPC*

The objection raised under this Article related to the omission of the terms "homolytically cleavable" from operative claims 1 and 2 (see sections XI.(b) and XII.(c) above).

5.1 Admissibility of the objection

The amendment to the claims in respect of which this objection was raised had been made in the submission of the patent proprietor of 26 January 2006 during the opposition proceedings.

Pursuant to the ruling of G 9/91 (OJ EPO 1993, 408, reasons 19) amendments made to a patent in the course of opposition or appeal proceedings are to be fully examined for their compatibility with the requirements of the EPC, Art. 123(2) and (3) EPC being mentioned explicitly in this connection.

Accordingly this objection is admissible.

5.2 *The literal disclosure of the patent as granted - relationship to the amended claims*

5.2.1 Granted claims 1 and 2 specified the initiator only to the extent that this was a compound comprising a homolytically cleavable bond with a halogen atom (see section I above). The chemical nature (e.g. structural formulae) of this component was not specified in said claims. In the granted patent, this structural information was however specified in claim 10 by its dependency, *inter alia* on claims 1 and 2.

5.2.2 The definition of the initiators now present in operative claims 1 and 2 of the main request corresponds to the disclosure of granted claim 10 with some further restrictions, as discussed in the foregoing section with respect to Art. 123(2) EPC.

5.2.3 As a consequence of the dependence of granted claim 10 on "any previous claim" the features of claims 1 and 2 were thereby subsumed into claim 10, including the feature that the initiators comprised a homolytically cleavable bond with a halogen atom.

5.2.4 Therefore, according to the dependencies of the claims of the granted patent the feature that the initiators now specified in claims 1 and 2 had a homolytically cleavable bond with a halogen atom was presented as being an inherent feature of the compounds of the stated formulae of claim 10. On this view, it was not necessary and would arguably even have been redundant to specify this feature at the same time as specifying the various structural formulae.

5.3 Thus taking into account the strict literal meaning of the wording and the structure of the claims of the application as filed and that of the patent as granted it is concluded that the omission of an explicit reference to this property does not result in an extension in scope compared to the patent as granted.

5.4 *The technical aspects of the feature "homolytically cleavable"*

5.4.1 Whilst it is a fact that the requirement of the bond being homolytically cleavable was not defined in

isolation in claims 1 and 2 of the patent as granted, it is also the case that there is no statement in the patent in suit which would lend support to the position of the respondent (section XII.(c) above) that this property had to be manifested spontaneously and under all circumstances.

5.4.2 At the oral proceedings the Inventor explained, with reference to the document cited by the respondent D69, that the question of the manner in which a bond was cleaved depended on a number of factors including but not limited to the (electronic) environment in which it was present (section XII.(c) above). This was not contested by the respondent.

5.4.3 Granted and operative claims 1 and 2 reflect this submission by specifying in addition to the initiator whether defined generically as containing a homolytically cleavable bond with a halogen atom (patent as granted) or by specifying (generic) formulae (operative claims):

- The first compound MY and
- The organodiimine (see section I above)

which, since these interact with the initiator reflect the (electronic) environment in which it is present in the claimed catalysts.

5.4.4 Consequently there is no reason to conclude that any of the specific formulae now subsumed under the term "initiator" in operative claim 1 fall outside the scope of granted claim 1 in the sense that the C-X bond they each contain was not, in fact, a "homolytically cleavable bond with a halogen atom".

5.5 A further aspect, as submitted by the appellant at the oral proceedings (see section XII.(c) above), and explained in paragraph [0007] of the patent in suit is that the operation of the catalyst depends critically on the said halogen bond in fact undergoing homolytic cleavage.

In view of this it can be concluded that if the bond did not undergo homolytic cleavage then there would be no catalytic activity. In this situation the composition would not be a "catalyst" and hence would not fall within the scope of the claim in any case.

5.6 It is therefore concluded both on the basis of consideration of the literal disclosure of the claims of the patent as granted on the one hand, and of technical aspects on the other that the deletion of the term "homolytically cleavable" and replacement thereof with the formulae of the compounds disclosed as exhibiting this property does not in the present case result in a broadening of the scope of the operative claims as compared to the claims of the patent as granted.

5.7 The main request therefore meets the requirements of Art. 123(3) EPC.

5.8 The Board is aware that part of the factual basis for the above finding relied on the uncontested statements made by the inventor at the oral proceedings (section XII.(c) above).

5.9 *Admissibility of oral submissions by the Inventor*

5.9.1 Whilst the respondent having requested in its letter of 18 November 2008 that the Inventor (Professor Haddleton) not be allowed to present oral testimony (section X above), which request had been complied with by the Board (see section XII.(c), 6th paragraph above) this party furthermore resisted on the occasion of the oral proceedings (see section XII.(c) above) the request of the appellant that the Inventor be allowed to speak on a specific point, viz. the meaning of the term "homolytically cleavable bond with a halogen atom". In this connection the Board considered, however, since this was the core of the issue which had been raised only 2 weeks before the oral proceedings by the respondent (see sections XI.(b) and XII.(c) above), that it was appropriate to review the chronology of the relevant submissions:

- 10 November 2008: Final date for submissions set by the Board
- 10 November 2008: Letter of the appellant announcing the attendance of the Inventor request that he be allowed to speak;
- 18 November 2008: Letter of the respondent in which it was requested that the technical expert not be allowed to speak;
- 26 November 2008: Letter of the respondent in which the objection pursuant to Art. 123(3) EPC was raised.
- 10 December 2008 oral proceedings before the Board

- 5.9.2 Thus the objection pursuant to Art. 123(3) EPC was raised for the first time in the entire opposition and opposition appeal proceedings by the respondent in its letter of 26 November 2008, after the appellant had announced the attendance of the Inventor (letter of 10 November 2008), and after the final date set by the Board for submissions prior to the oral proceedings of 10 December 2008.
- 5.9.3 The appellant indicated at the oral proceedings that it could deal with this objection by means of oral submissions from the accompanying technical expert, i.e. the Inventor (see section XII.(c) above).
- 5.9.4 According to the decision G 4/95, it is required that the request for permission for oral submissions to be made should state the name and qualifications of the accompanying person and should specify the subject-matter of the proposed oral submissions (G 4/95 Order 3.(b).(i)). It is also required that the request should be made sufficiently in advance of the oral proceedings so that all opposing parties are able properly to prepare themselves in relation to the proposed oral submissions.
- 5.9.5 Regarding the identification of the technical expert and the subject-matter of the proposed submissions, in the present case the letter announcing the attendance of the technical expert - submitted on the final date set by the Board for submissions prior to the oral proceedings - identified him by name (Professor David Haddleton) and stated his qualification, namely as being the Inventor. The information that this was the Inventor further established the relationship of the

named expert to the patent in suit and by virtue thereof established in general terms that the subject matter of his submissions would be the invention of the patent in suit.

5.9.6 Whilst it is true that G 4/95 calls for an advance indication of the subject-matter of the proposed oral submissions, in the present case a different situation arose in that the subject matter of the oral submissions in respect of which the appellant requested permission for the Inventor to speak was itself dictated by the objection of the respondent which had been raised only after the final date set by the Board. Under these circumstances, which do not fully reflect those underlying G 4/95, the Board saw no equitable reason to exercise its discretion against the appellant in respect of oral submissions from the Inventor on this one specific point.

5.9.7 Regarding the objection of the respondent that permitting the technical expert of the appellant to speak would put it at a disadvantage due to the absence of the presence of a technical expert on its behalf (see section XII.(c) above) the Board observes that at the time the respondent raised the objection pursuant to Art. 123(3) EPC it was already aware that the appellant would be accompanied by a technical expert, and would similarly have been at liberty to have present a technical expert on its behalf. This omission on the part of the respondent cannot be turned to the disadvantage of the appellant, in particular since the matter in respect of which it was requested that the technical expert be heard had been raised by the respondent.

5.9.8 Accordingly the Board concluded that, under the particular circumstances of this case, the conditions laid down in relation to oral submissions in accordance with G 4/95 were no bar to the Inventor's submission on the term "homolytically cleavable bond with a halogen atom" and consequently allowed the Inventor to speak.

6. *Novelty*

6.1 *Overview*

According to the decision under appeal, novelty of the subject matter of the claims of the fifth auxiliary request was denied because certain features of the operative claims were not entitled to claim priority from either of the two priority documents and were anticipated by the disclosure of D64 (see section III.(c) and (d) above).

6.2 *Publication date of D64 - relationship to patent in suit and priority document PD2*

D64 was published on 7 April 1997 which is the date on which the priority document PD2 was filed (see sections I and II above). Accordingly pursuant to Art. 54(2) EPC as D64 was not published **prior** to the filing date of PD2 it is not comprised in the state of the art in respect of subject matter contained in PD2.

6.3 *Requirements for claiming priority*

6.3.1 The objection raised by the opposition division, namely that since a number of features of the claims were not mentioned in either of the priority documents, those

parts of the subject matter of the fifth auxiliary request did not benefit from either of the priority dates (see section III.(c) above) was based on the wrong criteria.

6.3.2 Art. 88(4) EPC refers to "elements of the invention" and specifies that even if these elements do not appear among the claims of the previous application, it is nevertheless still possible to recognise priority provided that the documents of the previous application as a whole (i.e. the priority document) specifically disclose such elements.

6.3.3 The meaning of Art. 88(4) EPC and its relationship to Art. 84 EPC, according to which the claims of the European patent application define the matter for which protection is sought, and hence determine the matter for which priority was claimed was considered by the Enlarged Board in opinion G 2/98 (OJ EPO 2001, 413). In section 6.2 of the Reasons for the Opinion the Enlarged Board concluded that the term "elements of the invention" referred to in Art. 88(4) EPC and the terms "elements of the European patent application" referred to in Art. 88(3) EPC were to be considered synonymous. Both of these i.e. an "element of the invention" and an "element of the European patent application" constituted subject-matter as defined in a claim of the European patent application.

6.4 *Criteria to be considered in respect of D64*

From this it follows that the question to be answered in ascertaining the status of D64 is whether there is any subject matter disclosed in D64 which while being

within the scope of a claim of the patent in suit, i.e. being an "element of the invention" is not disclosed in the priority document PD2. If such subject matter exists then the conclusion would be that D64 is comprised in the state of the art for such subject matter - due to the lack of priority for such subject matter - and accordingly that such subject matter would lack novelty with respect to the disclosure of D64.

If, on the other hand it were to be concluded that the subject matter disclosed in D64 which was within the scope of a claim of the patent in suit was also disclosed in the priority document then the conclusion would be that D64 was not comprised in the state of the art pursuant to Art. 54(2) EPC and could not stand in a novelty-destroying relationship with respect to such subject matter.

6.5 *D64 - analysis*

D64, the principal author of which is the Inventor of the patent in suit is entitled "Monohydroxy terminally functionalised poly(methyl methacrylate) from atom transfer radical polymerisation".

D64 reports a reaction in which:

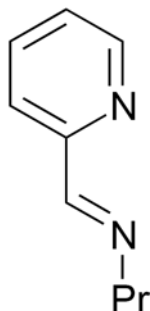
2-hydroxyethyl 2'-methyl-2'-bromopropionate was employed as an initiator in the polymerisation of methyl methacrylate.

This initiator corresponds to Formula 11 of operative claim 1 part b) with two of the residues R=Me, one residue R= hydroxyethyl and X=Br. Accordingly the initiator falls within the scope of claim 1, i.e. is an "element of the invention".

The further constituents of the polymerisation system were:

CuBr: In this compound, the Cu is in a valency state of 1, i.e. is in a low valency state. Br is a monovalent counterion. Accordingly CuBr corresponds to feature a) of claim 1 as regards the metal and the counterion and hence is an "element of the invention" (see section III above).

Regarding the ligand specified in part a) of claim 1 there is also present in D64 a compound of the following structural formula:



This compound, propyl pyridine carbaldehyde, is a diimine in which one of the nitrogen atoms is not part of an aromatic ring and thus corresponds to the definition of feature c) of operative claim 1.

It is disclosed in D64 that a complex is formed between the Cu and propyl pyridine carbaldehyde, i.e. the propyl pyridine carbaldehyde acts as the ligand.

D64 does not however specify the isomeric form of the propyl group (*n*- or *iso*-propyl).

Accordingly the resulting complex corresponds to feature a) of operative claim 1.

The various components are employed in the following ratios:

MMA:initiator 20:1
ligand:CuBr:initiator 3:1:1

The polymerisation was stopped at "low conversion", 7.65% after 70 minutes. The number average molecular weight, calculated from NMR was 2430.

6.6 *The disclosure of PD2*

Starting at line 5 of page 24 of PD2 a polymerisation process is reported in which the same initiator as employed in D64 is employed, i.e. a compound falling within the terms of feature b) of operative claim 1. CuBr was employed as the metal compound. This compound corresponds to feature a) of operative claim 1. As the ligand a compound designated XII was employed. The preparation of this compound is disclosed on page 22 of PD2, which, by means of the indicated structural formula reports that it is *n*-propyl pyridine carbaldehyde, i.e. a compound of the structural formula reported in section 6.5 above in which however the "Pr" group is specified as being the *n*-isomer (linear). This compound corresponds to feature c) of operative claim 1.

Polymerisation was effected by employing the components in the following ratios:

MMA:initiator 20:1
Ligand:CuBr:Initiator 3:1:1.

The polymerisation was stopped at "low conversion", 7.65 % after 70 minutes The resulting number average molecular weight, calculated by NMR was 2430.

6.7 *The relationship between PD2 and the operative claims*

As noted above the metal salt, initiator and ligand employed in the passage commencing at page 24 line 5 of PD2 fall within the terms of features a), b) and c) respectively of operative claim 1.

Accordingly the patent in suit may claim the priority of PD2 in respect of these elements of the subject matter thereof.

6.8 *Discussion of the disclosure of D64 and PD2*

From the foregoing it is apparent that the example disclosed in D64 and that starting at page 24 of PD2 employ the same metal and counter ion, the same initiator, the same monomer. The results reported are also essentially identical.

A difference occurs however at the level of the ligand employed.

In PD2 this is specified as being *n*-propyl pyridine carbaldehyde.

The definition of the ligand in D64 is however less specific because it is not specified which isomeric form of propyl is present.

The propyl radical can however exist in one of two forms - linear (*n*-propyl) and branched (*i*-propyl or *iso*-propyl).

D64 is a report of a specific experiment. The consequence of the failure to specify the isomer of propyl employed means that there exists an uncertainty

as to what is the precise disclosure of D64. Further there is no means provided within D64 itself, or by any of the references therein contained by which this uncertainty could be resolved.

There is thus no disclosure in D64 of a catalyst within the scope of operative claim 1 containing a specific ligand in a specific isomeric form (linear) which is not also present in the priority document PD2.

- 6.9 The situation that thus arises is that the subject matter which is common to claim 1 of the patent in suit and D64 is disclosed - in a more restricted, precise form - in the priority document PD2.

Accordingly, following from the considerations set out in sections 6.3 and 6.4 above, claim 1 is entitled to claim priority from PD2 with the consequence that D64 is not comprised in the state of the art pursuant to Art. 54(2) EPC.

- 6.10 The same conclusion is reached with respect to claim 2 of the main request which specifies the components of the catalyst in the same terms as claim 1.

- 6.11 The argument of the respondent that the broader disclosure of "propyl" in D64 was entitled to be interpreted as falling under the scope of claim 1 of the patent in suit by virtue of the reference to "propyl" but outside the scope of PD2 since it was not restricted to "n-propyl" (see section XII.(f) above) is not convincing since, as explained in section 6.8, fifth paragraph above the disclosure of D64 is in the nature of a single example, i.e. giving rise to an individual product which is however incompletely

defined, and not to be regarded as a disclosure of more than one variant in this connection.

6.12 The only objection against novelty on appeal being on the basis of D64, the subject matter of the claims 1 and 2 of the main request is therefore novel in view of the cited prior art. Claims 3-18 are either dependent on these claims or refer to the catalyst compositions thereof.

Accordingly this conclusion applies *mutatis mutandis* to these claims.

6.13 The subject matter of the main request therefore meets the requirements of Art. 54 EPC.

7. *The further procedure*

Both parties indicated that they wished to have the case remitted to the first instance for consideration of inventive step (See section XII.(g) above).

The Board is satisfied that this is the appropriate course of action.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution on the basis of the main request filed during the oral proceedings.
3. The request for reimbursement of the appeal fee is refused.

The Registrar:

The Chairman:

E. Goergmaier

R. Young