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# D E C I S I O N
## of 30 October 1996

**Case Number:** T 0206/93 - 3.3.3

**Application Number:** 85904206.1

**Publication Number:** 0190317

**IPC:** C08G 18/00

**Language of the proceedings:** EN

**Title of invention:**
Internal mold release compositions, active hydrogen-containing compositions containing the internal mold release compositions and a process for preparing molded polyurethane and/or polyurea and like polymers

**Patentee:**
THE DOW CHEMICAL COMPANY

**Opponents:**
1. Imperial Chemical Industries PLC
2. BASF Aktiengesellschaft, Ludwigshafen

**Headword:**
-

**Relevant legal provisions:**
EPC Art. 83, 84, 113(2), 123(2)

**Keyword:**
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**Decisions cited:**
T 0153/85; T 0406/86; T 0051/90; T 0270/90; T 0409/91; T 0435/91; T 0955/91; T 0241/92; T 0694/92; T 0659/93; T 0840/93; G 0002/88; G 0010/91;

**Catchword:**
Late-filed claims not clearly allowable (no sufficient disclosure, no clarity, no support by the description) - no text agreed upon by the Appellant.

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Case Number: T 0206/93 - 3.3.3

# D E C I S I O N
## of the Technical Board of Appeal 3.3.3
## of 30 October 1996

**Appellant:** (Proprietor of the patent)
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**Decision under appeal:** **Decision of the Opposition Division of the European Patent Office posted 5 January 1993 revoking European patent No. 0 190 317 pursuant to Article 102(1) EPC.**

**Composition of the Board:**

**Chairman:** C. Gérardin
**Members:** B. ter Laan
J. A. Stephens-Ofner

## Summary of Facts and Submissions

I. Mention of the grant of European patent No. 0 190 317 in respect of European patent application No. 85 904 206.1, filed on 16 August 1985, claiming priority from an earlier application in the United States of America (641883 of 17 August 1984), was announced on 31 October 1990, on the basis of thirteen claims, Claim 1 reading as follows:

"An internal mold release composition comprising a zinc, calcium or magnesium salt of a carboxylic acid, phosphorus-containing acid or boron-containing acid and a tertiary amine compound having one or more alkanol or hydroxy-terminated poly(oxyalkylene) groups attached to a tertiary nitrogen atom."

Claims 2 to 8 were dependent and referred to preferred embodiments of the internal mould release composition as defined by Claim 1.

Independent Claim 9 referred to:

"An active hydrogen-containing composition comprising (a) at least one polyahl having dispersed or dissolved therein (b) an effective amount of the internal mold release composition of any of claims 1 to 8."

Independent Claim 10 was directed to:

"A process for preparing molded polyurethane and/or polyurea and like polymers, which process comprises reacting in a suitable mold a mixture of polyisocyanate or polyisothiocyanate "A side" component and an active

hydrogen-containing "B side" component, characterized by conducting said reaction in the presence of the internal mold release composition of any of claims 1 to 8."

Claims 11 to 13 were dependent and respectively referred to preferred embodiments of the process as defined in Claim 10 (Claim 11) and the composition as defined in Claim 9 (Claims 12 and 13).

II. On 12 July 1991 and 31 July 1991 respectively, two Notices of Opposition were filed and revocation of the granted patent in its entirety was requested on the grounds set out in Article 100(a) EPC as well as Articles 100(b) and 100(c) EPC.

III. By a decision announced orally on 12 November 1992, issued in writing on 5 January 1993, the Opposition Division revoked the patent. The decision was based upon one set of seven claims filed during oral proceedings, which all referred to a process for preparing moulded polyurethane and/or polyurea, in which the amount of tertiary amine compound was specified. The Opposition Division held that the claimed subject-matter did not comply with Article 123(2) EPC and lacked an inventive step.

IV. The Appellant (Proprietor) lodged an appeal against that decision on 1 March 1993 and paid the prescribed fee at the same time.

With the Statement of Grounds of Appeal filed on 6 May 1993, a set of ten claims was filed as the sole request. Those claims not only contained process claims but also product claims, in both of which the amount of tertiary amine compound was specified.

With a letter dated 30 September 1996 the Appellant withdrew Claims 1 and 9 then on file and instead filed two new sets of Claims 1 and 9 as the basis of its main and auxiliary requests, in which the amount of tertiary amine compound was not defined any longer. Claims 2 to 8 and 10 remained unamended.

V. On 30 October 1996 oral proceedings were held, during which the Respondents raised objections under Articles 83, 84 and 123(2) EPC against the claims submitted with the letter of 30 September 1996. The Board, too, made some remarks regarding the absence of a number of features described as essential in the patent specification, in particular the requirements that (a) the metal salt of the carboxylic acid should contain at least one lipophilic group and (b) the mixture of tertiary amine, metal acid salt and other components if any, should be prepared at a temperature above the melting point of each of the components.

In response, the Appellant withdrew Claims 1 and 9 then on file and replaced them by two further sets of Claims 1 and 9 by way of main and auxiliary requests. Claims 2 to 8 and 10 again remained unamended and hence corresponded to those filed with the Statement of Grounds of Appeal filed on 6 May 1993. The two independent claims according to the main request read:

Claim 1:

"A process for preparing molded polyurethane and/or polyurea, which process comprises reacting in a suitable mold a mixture of a polyisocyanate or polyisothiocyanate "A side" component and an active hydrogen-containing "B-side" component, which active hydrogen component comprises:

(a) 0.5 to 5 weight percent, based on the weight of

the active hydrogen containing composition, of a zinc, calcium or magnesium salt of a carboxylic acid, phosphorus-containing acid or boron-containing acid, wherein the acid contains at least one lipophilic group;

(b) a tertiary amine compound having one or more alkanol or hydroxy-terminated poly(oxyalkylene) groups attached to a tertiary nitrogen atom; and

(c) a polyether polyol;

wherein component (a) and component (b) are heated under conditions such that, when (a) and (b) are in contact with component (c), component (a) is rendered compatible with component (c), component (a) being otherwise incompatible with component (c);

and wherein component (a) is rendered incompatible with component (c) when the active hydrogen component is reacted with the polyisocyanate or polyisothiocyanate component."

Claim 9:

"An active hydrogen-containing composition comprising

(a) 0.5 to 5 weight percent, based on the weight of the active hydrogen containing composition, of a zinc, calcium or magnesium salt of a carboxylic acid, phosphorus-containing acid or boron-containing acid, wherein the acid contains at least one lipophilic group;

(b) a tertiary amine compound having one or more alkanol or hydroxy-terminated poly(oxyalkylene) groups attached to a tertiary nitrogen atom; and

(c) a polyether polyol;

wherein component (a) is rendered compatible with component (c) by heating in the presence of component (b), component (a) being otherwise incompatible with component (c);

and wherein component (a) is rendered incompatible with component (c) when the active hydrogen component is reacted with a polyisocyanate or polyisothiocyanate."

The auxiliary request differed from the main request in that in both claims the term "compatible" was modified so as to read "stably soluble or stably homogeneously dispersible", the term "incompatible" was amended into "not stably soluble or stably homogeneously dispersible" and the expression "is rendered incompatible with component (c)" now read: "becomes insoluble in or precipitates out of component (c)".

The Board issued a warning that new claims, in view of their late filing, should be clearly allowable and in case of a negative finding in that respect, no admissible claims might be on file. It was also pointed out that, in the interest of a proper procedure, any further claims should be filed at the begining of the oral proceedings, so that a request to file new claims later would not be allowed. Furthermore in the possible absence of claims overcoming all the objections raised hitherto no discussion of the substantive issues could take place. Nevertheless, the Appellant merely requested to have another opportunity to file new claims if the present ones were found unacceptable. The Respondents protested against such a procedure.

VI. The Appellant argued essentially that

(a) Regarding Article 123(2) EPC, in the main request

the compatibility requirements of components (a) and (c) were based upon the application as originally filed, according to which the tertiary amine rendered the metal salt of an organic acid compatible with the active hydrogen containing compound, but not in the presence of a polyisocyanate.

The necessity of heating the mixture was also indicated in the description as originally filed, e.g. the examples, and confirmed by the affidavit submitted with the letter of 30 September 1996. The wording of the auxiliary request was likewise based upon the description as well as the examples.

(b) Regarding Articles 83 and 84, apart from the fact that the skilled person would have known the meaning of the term "compatible" (which was also present in the claims as granted), the patent specification described both the way to determine compatibility and how to compatibilize compounds. Although it was necessary to apply heat to the mixture, it was not an essential feature to heat it to a temperature above the melting point of the components. This could be concluded from the examples 4 to 8, in which Zn laurate, with a melting point of 128°C, was used as the metal salt of the carboxylic acid and the mixture was heated to 80 to 100°C. Therefore, the claimed subject-matter was clear and it could also be carried out by the skilled person.

VII. The Respondents argued essentially that

(a) From the application as originally filed it could not be learned that the heating should take place under such conditions that compatibilisation and

decompatibilisation would take place as now described in Claim 1. The only reference to heating in the original application referred to the melting points of each of the components of the mixture, but not to compatibilisation. Hence the word "heating" as now used in Claims 1 and 9 was, in view of the original disclosure, too general, so that the requirements of Article 123(2) were not fulfilled.

(b) Not only the word "compatible", but also the term "heating under conditions such that" was unclear as it did not constitute a definition of the measures necessary to obtain the required compatibility, but only indicated the result to be achieved. Hence Article 84 EPC was not complied with.

(c) From the affidavit filed with the letter of 30 September 1996, it could be learned that sufficient heating of the mixture of components was necessary in order to obtain the required compatibility. However, neither from the claims, nor from the patent specification could it be understood that sufficient heating should be applied. Therefore, the disclosure was not enabling, which contravened Article 83 EPC.

VIII. The Appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main or auxiliary requests both submitted during oral proceedings.

The Respondents requested that the appeal be dismissed.

## Reasons for the Decision

1. The appeal is admissible.

*Admissibility of claims*

2. During the appeal procedure the Appellant filed new claims three times (see points IV and V above).

2.1 The first set of claims, filed with the Statement of Grounds of Appeal as the Appellant's single request, did not correspond essentially to the claims upon which the decision under appeal had been based, nor were they filed as a consequence of issues raised by the Opposition Division or the Respondents, because, for example, product claims had been added.

2.2 The second set of claims, Claims 1 and 9 filed with the letter of 30 September 1996, i.e one month before the oral proceedings before the Board, lacked a number of restrictions (e.g. the amount of tertiary amine compound) and was therefore broader than the claims of the Appellant's previous single request. For that reason, it cannot be regarded as a reaction to the submissions made or as an attempt to overcome any objections raised by the Respondents. As the Appellant did not provide any justification for the late filing of those claims, a procedural question regarding their admissibility would have been raised had they not been withdrawn during the oral proceedings before the Board and replaced by the current set of claims.

2.3 Although that third set of claims, unlike the second set, was filed in response to objections made by the Respondents and certain observations made by the Board, those objections were raised only as a reaction to the

late filed second set of claims and could not have been submitted earlier. The claims of the third set, which constitute the Appellant's main and auxiliary requests to be decided upon, are therefore to be considered as new claims, filed at a very late stage.

2.4 According to established EPO jurisprudence (T 153/85, OJ EPO 1988, 1, and T 51/90, T 270/90 and T 241/92, not published in OJ EPO), late filed claims may be disregarded by the Board if they are not clearly allowable. Therefore, in order to decide upon the admission of the two requests submitted late in the proceedings, the question of their clear allowability needs to be dealt with first.

*Article 123(2)*

3. Starting with the new claims according to the main request, Claim 1 differs from Claim 1 as originally filed, amongst other things, in the requirement that components (a) and (b) are **heated under such conditions that** component (a) is rendered compatible with component (c), which compatibility is ended by the reaction with polyisocyanate or polyisothiocyanate.

3.1 The compatibilizing function of component (b), the tertiary amine, which ceases upon the addition of polyisocyanate or polyisothiocyanate, basically corresponds to the information given in original Claim 1 and in the original description, page 5, line 24 to page 6, line 6 (page 3, lines 8 to 16 of the patent specification), in particular original page 5, lines 24 to 30 (page 3, lines 8 to 11 of the patent specification): "The internal mold release (IMR) composition of this invention comprises a metal salt of an organic acid and a tertiary amine compound which is a compatibilizer for the metal salt in an active

hydrogen containing mixture but does not significantly compatibilize the metal salt in a reacting mixture comprising the active-hydrogen-containing composition and a polyisocyanate."

3.2 However, the passage "heating under conditions such that" by itself is not present in the original application. Therefore, it has to be decided whether the information in the original application in respect of the heating of the mixture in general and under conditions such as to compatibilize components (a) and (c) in particular, is sufficiently clear to make that passage directly and unambiguously derivable from it. As the original claims do not refer to any heating, only the original description remains to be analysed.

3.2.1 The only reference to heating can be found on page 15, line 27 to page 16, line 2 of the original description (page 6, lines 20 to 23 of the patent specification), where it is stated that: "The IMR composition of this invention is prepared by mixing the tertiary amine compound, the metal salt and other components if any, at a temperature above the melting point of each of the components. For many metal salts, a somewhat elevated temperature, i.e. 30-150°C is required to mix the tertiary amine and the metal salt due to the high melting point of the salt." However, in the Examples 4 to 8, in which Zn laurate with a melting point of 128°C is used as the metal salt, the mixing is carried out at various temperatures ranging from 80 to 110 °C, that is, below the melting point of the metal salt. The Examples 1 to 3, according to which the compositions are prepared by "blending" together the components, do not provide any information as regards the actual temperature used or whether any heating at all is applied. Page 6, lines 8 to 15 of the original description (page 3, lines 17 to 21 of the patent specification) indicates that compatibilization can be

measured by **blending** the mixture, which does not suggest the necessity of heating. Therefore, even if there is a clear teaching that the mixing temperature should be above the melting point of each of the components of the mixture, this is contradicted by the examples and by other parts of the description.

3.2.2 In view of the above analysis of information contained in the original description regarding heating of the mixture, it must be concluded that there is no disclosure for the broad term "heating" by itself, nor for any link between any heating step and other specific conditions necessary for the compatibilization of components (a) and (c) either.

3.3 In the light of this, the application as originally filed cannot be considered to provide an adequate basis for the broad term "heating" as such, nor does it suggest that heating should be applied under such conditions as to result in compatibilization of components (a) and (c), so that the requirements of Article 123(2) are not fulfilled.

*Articles 83 and 84 EPC*

4. The relationship between Articles 83 and 84 EPC has been discussed in e.g. T 409/91 OJ EPO 1984, 309; T 659/93, not published in OJ EPO; T 435/91, OJ EPO 1995, 188 and T 694/92, to be published in OJ EPO. It rests on the principle of fair protection, that is to say, that the protection conferred by a patent should correspond to the technical contribution to the art made by the disclosure of the invention described

therein, which excludes the patent monopoly being extended to subject-matter which, after reading of the patent specification, would still not be at the disposal of the skilled person.

5. In the present case, the question to be answered is whether the conditions such that the desired compatibilization of components (a) and (c) occurs, are made available to the skilled person, in particular, whether the meaning of the expressions "compatible" and "heating under conditions such that" are clear, are supported by the description and are based upon an enabling disclosure.

6. "Compatibility" is a concept normally used in the art and the explanation of its meaning in the patent specification would not appear to deviate from what the skilled person would usually understand by it. Moreover, it had been present in the claims as granted, thus making its examination regarding Article 84 EPC questionable. However, the case lies differently with "heating under conditions such that".

6.1 The claims as granted did not contain any reference to heating the mixture under such conditions as to render compatible components (a) and (c). Therefore, although Article 84 does not form a ground for opposition, it is legitimate to assess the clarity of the thus amended claims as well as their support by the description (see G 10/91, OJ EPO 1993, 420, Reasons, point 19).

6.1.1 The question of what is required for a claim to be clear, has been dealt with in a number of decisions of the Boards of Appeal. The criteria thus developed imply that a claim must not only define the matter for which

protection is sought in terms of technical features of the invention, but must also contain all the necessary features for solving the technical problem with which the patent was concerned (see e.g. T 409/91, supra).

6.1.2 In the present case, the wording of Claim 1 suggests that, apart form heating, still further conditions are necessary for rendering components (a) and (c) compatible. As the claim does not indicate any such conditions in terms of necessary technical features, or, in other words, does not define any such conditions, it leaves the skilled person at a guess as to precisely what those conditions might be. A reference to the description would, in this case, not provide sufficient information either (see point 5 below). For these reasons, it cannot be accepted that the claims enable the protection conferred by the patent to be determined (see also G 2/88, OJ EPO 1990, 93, Reasons, point 2.1). Therefore, the subject-matter of Claim 1 must be considered to be unclear.

7. As pointed out above (point 3.2.1), the patent specification presents contradictory information regarding the temperature at which the mixing of the components of the claimed composition takes place. On the one hand, it is stated that the temperature is above the melting point of each of the components (page 6, line 21), on the other hand, Examples 4 to 8 are carried out below the melting point of the metal salt, whereas in Examples 1 to 3, in accordance with page 3, lines 17 to 21, no heating would appear to be applied.

7.1 Although there is no doubt that the skilled person would be able to actually repeat the individual examples, in particular Examples 4 to 8, in which the compatibilization by mixing, heating to 80 to 110°C and stirring of the claimed composition, and its

consecutive reaction with a polyisocyanate is illustrated, the description does not contain any information allowing the skilled person to attain the desired effect at a lower temperature, e.g. at 30 or 50°C, which values are not only mentioned in the patent specification (page 6, line 22), but are also encompassed by the general term "heating" (e.g. heating from room temperature to 30°C) in the claims.

7.2 On the contrary, the Appellant with the affidavit filed with the letter of 30 September 1996 demonstrated clearly that such low mixing temperatures do not result in the formation of Zn stearate/triethanolamine complexes, whereas such complexes do form at temperatures of 80 to 100°C. This would suggest, in accordance with the Appellant's remark "... compatibilization is a reliable indicator of complex formation..." (letter of 30 September 1996, page 5, last paragraph), that compatibilization of the mixture does not take place at temperatures as low as 30 to 50°C. This contradicts both teachings of the patent specification, contradictory in themselves, that the internal mould release composition is simply prepared by blending (page 3, lines 17 to 21) and that mixing is carried out at temperatures above the melting points of each of the components (page 6, lines 20 to 23).

7.3 The affidavit hence shows that - contrary to the teaching of the patent specification, page 3, lines 17 to 21, that the internal mould release composition is simply prepared by blending - the mere heating of the mixture is not sufficient, but rather that a sufficient degree of heating is required for obtaining the desired effect.

The "sufficient amount of heat" must therefore be regarded as a prerequisite to obtain the decisive advantages over the prior art and thereby overcome the shortcomings reported in the patent specification (page 2, lines 10 to 48), be it expressed in terms of compatibilization or in terms of complexation. Those advantages reflect the Appellant's contribution to the art and should not be disclosed as mere wishes, but by the means of the operative features, e.g. the physical conditions leading to the desired result, which is in this case applying a sufficient degree of heating to the mixture. As this operative feature can neither be learned from the claims as now formulated, nor from the patent specification, in particular the passage where the compatibility test is described (page 3, lines 17 to 21), or from the examples, not only the question of the definition of the process is raised, but also that of the enabling disclosure.

7.4 In view of the above, it must be concluded that the patent specification does not contain sufficient information to allow a skilled person, using his common general knowledge, to carry out the invention within the whole area that is claimed, because all the conditions necessary to obtain the desired compatibilization of components (a) and (c) were not put at the skilled person's disposal.

8. Both from the analysis of the contents of the original description (point 3 above), which, on the points considering heating, does not differ from the patent specification, and from the appraisal of the disclosure it provides (point 6 above), it is clear that the present claims also lack support by the description.

9. In the light of the above, it must be concluded that the claims do not comply with any of the requirements of Articles 83 and 84 EPC.

*Conclusion*

10. From the above analysis of the wording of the present claims, it can be seen that, owing to the presence of the term "heating under conditions such that" in the claims, the patent in suit fails to meet the requirements of Articles 83, 84 and 123(2) EPC for basically the same reason, namely, the absence of information regarding essential technical features of the invention.

10.1 In particular, in the application as originally filed (Article 123(2) EPC), the claims under discussion (Article 84 EPC) and the patent specification (Article 83 EPC) nothing can be found about the necessity of not only applying heat, but applying it in a sufficient amount, in order to arrive at the desired compatibilization of component (a) with component (c) in the presence of component (b), which compatibility is ended upon reaction with a polyiso(thio)cyanate.

10.2 Since both the main and auxiliary requests contain the passage objected to, it follows that neither of those requests is clearly allowable. For that reason, the Board decides not to admit them into the proceedings.

11. The Appellant requested to have a further opportunity for filing new claims in case the ones on file would not be accepted, i.e. after discussion of the claims on file. In fact, this request is to be disregarded as an auxiliary request without however any specification of the claims to be discussed. Allowing such a request would have posed undue difficulties to the Respondents in dealing properly with such new claims and a possible adjournment would have led to an unacceptable delay in the proceedings. The Board perceives no exceptional circumstances that might have led to another

conclusion, nor have any such circumstances been advanced by the Appellant. Therefore, the Board considered the filing of this unspecified request contrary to proper procedure and decided to refuse it, (see also e.g. T 406/86, OJ EPO 1989, 302, Reasons 3; T 840/93, OJ EPO 1996, 335, Reasons 3.1 and 3.2 and T 955/91, not published in OJ EPO).

12. As the Appellant withdrew its previously filed requests and refrained from the opportunity to submit other auxiliary requests at the beginning of the oral proceedings, the situation arises that there is no longer any text agreed by the Appellant, which prejudices the maintenance of the patent (Article 113(2) EPC).

**Order**

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

The appeal is dismissed.

The Registrar:

E. Görgmaier

The Chairman:

C. Gérardin