

Examiners' Report on Paper B/1997

In this paper the candidates had to consider the independent process and product claims in detail. The wording of a use claim, if containing a reference to a claim which satisfied the requirements of Art. 52(1) EPC, could be maintained because it included all the limitations of that patentable claim. Some candidates were aware that amendments to the wording of claims 3 to 6 were not necessary, they gave this reason in their arguments and they submitted only those claims which had been amended. They were given full credit for this.

First, a short review of the documents cited in the communication as regards **novelty** and **inventive step**:

DIII relates to one of the two embodiments of the process claimed in claim 1, i.e. the process wherein the alkyl phenol is in the first step oxyalkylated and then in the second step sulphonated. The document anticipates this embodiment in its entirety (process and product and its different uses). Hence, this embodiment had to be excluded from the process claim.

DIV disclosed the sulphonation of aromatic compounds by means of SO_3 including neutralisation under azeotropic conditions. One of the preferred starting compounds used in the application was also used therein. Hence, there was no room to maintain claim 7. The advantages of the new sulphonating agent were also referred to in **DIV**.

DV related to sulphonic acids and their alkali metal salts which were identified by their structural formula. In addition, their preparation was referred to as being known from **DII**, **DIV** and **DI**. In the application, reference was also made to **DII** (page 3, last paragraph) for the first sulphonation step and to **DI** (page 3, paragraph 3) for the subsequent oxyalkylation. Therefore, the remaining embodiment of process claim 1 as presented in Paper B (the part not anticipated by **DIII**) was also known. However, the disclosure of **DV** was limited to alkyl groups of 18 to 24 carbon atoms. Hence, process claim 1 of the application could be delimited from **DV** by limiting **R** to alkyl groups having less than 18 carbon atoms provided there was initial disclosure for that. A definition fulfilling these requirements could be found in the last paragraph on page 2. The preferred range referred to 8 to 16 C-atoms. In accordance with T 02/81 (OJ 10/1982, 394-402), the range of **R** could be limited to 6 to 16 C-atoms. Claims based on these amendments are referred to here as **group I**.

DV additionally referred to the use of its compounds as an additive for concrete and as an additive for lubricants in the field of textiles and the production of threads and yarn. Therefore, claims to the other two uses - emulsion and microsuspension polymerisation, and enhanced mineral oil recovery - of the embodiment not anticipated by **DIII** could be maintained for the broad original scope of **R** of 6 to 24 C-atoms. Claims to these embodiments are referred to here as **group II**.

Some candidates incorrectly assumed that the same products were obtained whether or not the sulphonation preceded the oxyalkylation. That this was not the case was clear from the examples of the application.

A basis to support an **inventive step** of such claims could be found in the second paragraph of example 3. Sample **g** ($R = C_{18}$) had inferior properties to samples **e** and **f** ($R = C_8$ and C_{12} , respectively). The results provided an argument with respect to **DV**. Samples **e** and **f** were also better than samples **d** and **h** which provided an argument with respect to **DIII**. The products falling inside the scope of **DIII** and **DV** were less stable if heated under acidic conditions. Reference could then be made to paragraphs 3 and 4 on page 6 of the application to demonstrate that the advantage was not limited to the specific examples. The problem to be solved with respect to these two documents was thus to provide compounds having an improved stability against heat and acidic media.

As mentioned above, use claims to the enhanced mineral oil recovery and to the emulsion and micro-suspension polymerisation processes as disclosed in Paper B which included compounds known from **DV** (group II) were possible and expected. **DV** was totally silent with respect to these uses.

On the other hand, claims were possible and expected to the new group I compounds (correctly delimited from **DIII** and **DV**), to the process for their preparation and to their use in mineral oil recovery, polymerisation processes, as a concrete additive and as an additive to textile, fibre and yarn lubricants.

To summarise, candidates were expected to draft:

Group I: Product-by-process and process claims ($R = C_6$ to C_{16}) and claims to the uses of the above products (claims 3 to 6 as presented in Paper B),

Group II: Uses of the products where $R = C_6$ to C_{24} in oil recovery and polymerisation processes, and, of course, to correctly justify such claims.

The various possibilities outlined above give rise to considerations of unity. The preparation, product-by-process, and use claims of group I (with R having C_6 to C_{16}) are clearly linked to one another by the common special feature of the novel and inventive products themselves. However, these compounds could not serve as the basis for unity between the use claims of group I and the use claims of group II (with R having C_6 to C_{24}), since the compounds themselves of group II were known, in part, from **DV**.

Candidates were expected to note that there was a problem with unity, and to suggest a solution which overcame it. Those suggesting the filing of a divisional were expected also to avoid proposing applications with overlapping scope, in particular having regard to the use of compounds in mineral oil recovery and polymerisation processes.

One important requirement for success in Paper B was - apart from the appropriate drafting of the claims - consistency between the claims and the arguments submitted.

Although it was evident from the claims as presented, some candidates failed to present a complete set

of claims of group I, i.e. they did not draft product, process and use claims or they failed to indicate that some of the original claims 2 to 6 were maintained. This resulted in a significant loss of marks.

A narrower range of **R** in the group I claims (e.g. 8 to 16 C-atoms instead of 6-16 C-atoms) also resulted in a loss of marks.

Some arguments presented were not persuasive because they were not based on mandatory features of a claim, and were thus inconsistent with the claims.

One important point with respect to an appropriate definition of the problem to be solved with respect to the closest prior art is that the definition must not contain elements of the solution to be found. Thus, the objective technical problem cannot be the modification of the length of the **R** group, if the only distinguishing feature compared to the closest prior art is the different length of this group.

DV was misinterpreted by some candidates. They accepted that the same starting alkyl phenols were reacted in a first step in a sulphonation and in a second step in an oxyalkylation as disclosed in the prior art and in the application, but they assumed a different type of product to be obtained (e.g. having a sulfonated polyoxyalkylate chain). There are two comments: products having such a substituent were known from **DIII** (see the Guidelines C-III, 4.7b), and reacting identical starting compounds in the same way will result in the same products (see T 12/81, OJ 8/1982, 296-305).

Based on **DIV**, the process features of the sulphonation in the process claim of group I were amended by some candidates to "reacting the alkyl phenol in a well-known manner". This constitutes of course a violation of Art. 123 (2) EPC and resulted in a significant loss of marks.

It was not deemed sufficient to argue only one requirement for patentability, i.e. either novelty or inventive step, of a claim, and to ignore the other requirement.

Some candidates restricted their claims too far, some gave up the possible product and process claims and lost most of the marks available for claims.

A number of candidates did not realise that neutralisation was a reaction step to be carried out directly after the sulphonation (see page 5, third paragraph, and as indicated under point 8 of the communication), not after the oxyalkylation.

A claim to an intermediate (or its preparation) cannot contribute to a successful script when novelty is achieved only by disclaiming a particular compound (e.g. the 2-hydroxy-5-dodecyl benzene sulphonic acid). In this case the question of inventive step is still pending.

The examiners took the view that deletion of those process conditions which had been defined in independent claim 1 of Paper B did not comply with Art. 123 (2) EPC and resulted in a significant loss of marks.

A number of candidates did not use the arguments available in the examples, in particular, the direct comparison to the prior art cited (see the comments to inventive step, above).

As in previous years, some candidates suggested asking their clients for further advice or information. This examination is not comparable to normal application procedure. The examiners can only assess the ability of the candidate to correctly apply the information available at the examination. Suggestions that further inquiries should be carried out cannot contribute to a successful result. It appears to indicate rather that the candidates themselves were not convinced of their action.

It was not evident to all candidates that the use of a new and inventive product is accepted as patentable (see the Guidelines C-IV, 9.5a).

Some candidates did not realise that one prior art example falling inside the scope of the claim anticipates that claim (see the Guidelines C-IV, 7.4). A sulphonated dodecylphenol hence anticipated a sulphonated C_6 - to C_{16} -alkyl phenol.

Some candidates based their arguments on an alleged "non-enabling disclosure in **DIV**" and maintained a modified version of original claim 7 (wherein the dilution of SO_3 was limited to 4-8 vol.% and intensive mixing and cooling). These arguments were not convincing. With respect to the degree of dilution, even novelty appears debatable (both in **DIV**, page 23, penultimate paragraph, and in the application, page 5, paragraph 2, identical reference was made to the preparation of the sulphur trioxide).

Some of the candidates did not base their arguments on a fair reading of the prior art documents, but interpreted the disclosure in accordance with their needs. **DV** clearly referred to **DII** and **DIV** for the general recipe of the sulphonation to be carried out as the first step and to **DI** for the oxyalkylation step to be carried out afterwards during the preparation of the sulphonic acid compound of **DV**. Hence, in accordance with the Guidelines C-IV, 7.1, this aspect of **DV** had to be considered as well for the novelty of the process claim.

Finally, bad handwriting was a serious problem in some scripts. Candidates should be aware that those parts which cannot be read by the examiners, who are often not native speakers of the languages used in the scripts, cannot receive the possibly appropriate marks.

An argument that "there is no evidence that with a different degree of oxyalkylation the invention will not work" is not appropriate. In the application the degree of oxyalkylation was disclosed as an apparently mandatory feature ("ranges" as opposed to "can range"). Under these circumstances, the burden of proof of the opposite would be on the applicant.

"Since **DIII** discloses a part of our application, we would like to excise this part from the application and to further pursue it in a divisional application". Such a quotation appears to demonstrate that the candidate has not understood the criteria of Art. 52 (1) to 57 EPC, nor indeed, the concept of unity.

EXAMINATION COMMITTEE I

Candidate No.

Paper B (Chemistry) Schedule of marks

Category	Maximum possible	Marks awarded		Revision of marks / grade (if any)	
		Exr	Exr	Exr	Exr
Claims	24				
Argumentation	24				
Total	48				
Corresponding Grade					

Translation of marks into grades

Mark	Grade
0 - 11	7
12 - 17	6
18 - 23	5
24 - 29	4
30 - 35	3
36 - 41	2
42 - 48	1

Marking by further examiners if appropriate

	Claims	Argumentation	Total	Grade
Examiner				
Examiner				

Remarks (which must be given if both the following requirements are fulfilled:

- (a) the grades awarded by the two individual examiners before their discussion differ by two grades or more;
 (b) the marks awarded by at least one of the two individual examiners have been changed during their discussion.)

If marks are revised, a brief explanation should be given.

Sub-Committee for Chemistry agrees on _____ marks and grade _____

Grade recommended to Board _____

Paris, 22 August 1997



J. Combeau - Chairman of Examination Committee I