

Examiners' Report on Paper B/1991 (Chemistry)

The majority of the candidates accepted that in view of the disclosure of Document III, cited in the communication, the process for preparing polyimides as claimed in Claim 1 was no longer new. No candidate appeared to defend the claims as they originally stood. The majority of them presented amended claims and arguments in support thereof. There was however a great difference between the candidates in the skill with which this was done.

A certain number of candidates recognised that using a -diamino-diphenyl sulphide or -sulphone in the preparation of polyimides according to the process of the application was not disclosed in the prior art documents. They also showed themselves aware that after having assessed novelty it was also necessary to argue for an inventive step. In this respect most of such candidates correctly pointed out that it followed from examples 5 and 7, and from the figures of the table on page 10 of the application, that sheets made from polyimides prepared with the said diamines displayed mechanical properties significantly superior to those of polyimides prepared with other diamines and therefore an inventive step could be properly argued for this.

Some, accordingly, drafted a new independent claim to a process for preparing polyimides which was restricted to the utilisation of the said specific diamines. Most of these candidates also realised that since applicant appeared to be more particularly interested in shaped articles, e.g. films, sheets, a claim (generally a dependent claim) to the production of articles had also to be drawn up.

Only a small number of the candidates realised that polyimides prepared with a -diamino-diphenyl sulphide or a -diamino-diphenyl sulphone, irrespective of the preparation process, were basically novel and inventive over the prior art.

Consequently, a claim directed to the said polyimides, as well as to articles, e.g. films, sheets "obtainable" with the process limited to the specific amines was allowable. A product claim of this kind leads to the broadest possible protection for polyimides and articles made therefrom.

Only a few candidates appeared aware of the fact that the applicant was also entitled to claim a polyamide acid intermediate product made with said specific diamines.

The failure to draft claims for the latter two aspects of the invention resulted in a substantial loss of marks.

Less than half of the group of candidates referred to above showed a clear awareness of the presence of another important aspect of the invention which was patentable over the prior art. The aspect in question was the one relating to the production of polyimide microporous sheets exhibiting an asymmetric structure which makes them more particularly suitable for use as a semipermeable membrane.

It is true that this matter had not been the subject of claims included in the application submitted as Paper B. Candidates are warned, however, in the instructions that the documents filed "did not necessarily constitute the only or best solution to the task set in Paper A (chemistry)".

Candidates who were aware of the aforementioned other patentable aspect, had in the majority of cases opted for drafting a claim for a divisional application. This way of proceeding could be regarded as a good option, since, as a rule, it allowed obtaining a broad protection.

Other candidates had included in the single set of amended claims a separate claim for the said microporous sheets. That claim was drafted either as an independent claim or as a claim dependent on the specific polyimide production claim. In this latter case the scope of protection was less broad than in the case of an independent claim since no limitation in the sense indicated was necessary.

Protection for this second patentable aspect could properly be obtained with a claim broadly directed to a process for the production of a microporous sheet from polyimides whereby, as an essential feature, the layer of the polyamide acid intermediate product, while being spread on a support with a smooth surface, is treated with the anhydride of a C₂-C₄ aliphatic monocarboxylic acid so as to be converted to polyimide, and the polyimide sheet obtained is then removed from the support.

The absence of any claim for the production of said microporous sheet was therefore regarded as a very serious shortcoming.

Even among the candidates who had a claim for this item, few appeared to have realised that the sheets and membranes had a structure which was new and which could also be defined as inventive. Such an asymmetric porous sheet is a useful commercial product because of its differential porosity and selective permeability. A product claim, e.g. formulated as microporous sheets "obtainable" by the process mentioned herebefore was therefore allowable.

The failure to have this claim or to have a claim to the use of the microporous sheet as a semipermeable membrane for a separation process by reverse osmosis, resulted in the loss of marks.

A certain number of candidates had claims directed to a process for the preparation of polyimides characterised by the presence of a tertiary amine, more particularly trimethylamine or triethylamine during the treatment of the polyamide acid with the anhydride of the lower aliphatic monocarboxylic acid.

However, it was not considered that the use of a tertiary amine was, as a generality, inventive, although the use of trimethylamine and triethylamine could, to a certain extent, be argued as being inventive. Candidates who argued for an inventive step for these specific tertiary amines were given some credit for this approach.

When dealing with the Article 84 objection some candidates drafted very broadly worded claims which clearly went beyond what was disclosed in the application and would lead to an objection of added subject-matter. "Lower" could be replaced by C₂-C₄ without objection. However, C₂-C₆ would be objectionable. The candidates' approach to this point was disappointing.

In their comments with respect to the communication of the Office some candidates showed themselves readily able in argumentation. Many candidates, however, wasted time by commenting at some length on points of the communication relating to claims which they were going to abandon anyway. Others spent time unnecessarily on defending novelty and inventive step regarding dependent claims. Often a candidate argued quite well, but the claims which were presented were not consistent with the argument.

The amendments which the candidates made to the description sometimes did not reflect the amendments to the claims. In extreme cases claims were presented which had the consequence of requiring deletion of all the examples. Such claims were clearly not ones which the examiners were looking for.

EXAMINATION COMMITTEE I

Candidate Number No.

Report by Examiner No.

StudentBounty.com

FORM, for use by individual examiners, in PAPER B

Schedule of marks

Category	Maximum possible	Individual marks awarded	Where grades awarded are not identical	
			Revision of marks/grade (if any)	Remarks*
Claims	20			
Argument	20			
Description	8			
TOTAL	48			
CORRESPONDING GRADE				

Translation of marks into grades

Grade	Marks
7	0 - 6
6	7 - 13
5	14 - 20
4	21 - 27
3	28 - 34
2	35 - 41
1	42 - 48

* to be filled in 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 remarks are to be filled in, they should briefly explain **why** the examiner has changed his marks.