Examiners Report - Paper B 2006 Chemistry

The paper concerns controlled-release herbicide formulations based on microcapsules containing the herbicide. The application defines microcapsules, an in situ process for making them and the use of the microcapsules as controlled-release herbicides.

The microcapsules contain a core of a herbicide dissolved in a water-immiscible organic solvent and an aminoplast resin shell containing a protective colloid.

The microcapsules as well as the method for making them are disclosed in documents 1 and 2.

In order to overcome the novelty objection with respect to document 1 it is expected that the candidates would restrict the protective colloids to polymers and copolymers containing acrylic acid monomer units. Document 1 only discloses the following protective colloids: styrene-maleic anhydride copolymers, polyvinyl alcohol, carboxymethyl cellulose, starches and modified starches. None of these protective colloids contain acrylic acid monomer units.

Document 2 is prior art only in the sense of Articles 54(3) and (4) EPC and discloses microcapsules consisting of a core of thiocarbamate herbicide dissolved in a water-immiscible organic solvent and a melamine-formaldehyde resin (an aminoplast) shell containing one of two protective colloids one of which is an acrylamide-acrylic acid copolymer (see claim 2). The most elegant way to establish novelty with respect to document 2 is to disclaim the microcapsules containing an acrylamide-acrylic acid protective colloid in combination with a thiocarbamate herbicide and a melamine-formaldehyde resin shell disclosed in this document.

Claims

The expected product claim is worded as follows:

Microcapsules having an average diameter of 1-100 micrometers consisting of a core of a herbicide dissolved in a water-immiscible organic solvent and an aminoplast resin shell containing a protective colloid which is a polymer or copolymer containing acrylic acid monomer units and where microcapsules containing a thiocarbamate herbicide, a melamine-formaldehyde resin shell and acrylamide-acrylic acid copolymer protective colloids are excluded.

Numerous candidates propose claims in which acrylamide-acrylic acid copolymer protective colloids are disclaimed. This disclaimer is broader than necessary and thus points are deducted.

Candidates also propose claims in which the protective colloid is limited to acrylic acid-styrenesulphonic acid copolymers or in which the protective colloid is a polymer or copolymer containing acrylic acid monomer units and the herbicide is an acetamide. The scope of these claims is narrower than that of claims containing a disclaimer and attract a more severe point deduction.
It is not necessary to formulate the product claim as a product by process claim, as the product as such could readily be defined, and candidates who do so lose marks.

Original claims 2-4 can be maintained without any further substantial amendments. Candidates who introduce further limitations into these claims lose marks.
A new dependent claim directed to the microcapsules incorporating an acrylic acid-styrenesulphonic acid copolymer as the protective colloid is also expected.
50 marks are available for the claims.

Arguments

Basis for the amendments /Article 123(2) EPC

Candidates are expected to indicate the basis for each and every feature of the amended claims as well as for new combinations of features in these claims. Only referring to an example as providing the basis for a feature (where the feature is only disclosed in combination with other limitations) is not appropriate if there is a more general basis for the feature in the description.
It is expected that the candidates justify the disclaimer in the light of decisions G1/03 and G2/03. It is in particular expected that the candidates explain that a disclaimer can be used to establish novelty with respect to document 2 because this document is only prior art under Articles 54(3) and (4) EPC. It is also expected that the candidates justify why the scope of the disclaimer removes no more than is necessary to restore novelty.

A number of candidates disclaim acrylamide-acrylic acid copolymer protective colloids and argue that this disclaimer is in accordance with decisions G1/03 and G2/03. This is not the case. Document 2 only discloses acrylamide-acrylic acid copolymer protective colloids in combination with thiocarbamate herbicide and a melamine-formaldehyde resin shell.

Only disclaiming acrylamide-acrylic acid copolymer protective colloids thus removes more than is necessary to restore novelty.

Novelty

The candidates are expected to briefly summarise the prior art documents and to highlight the distinguishing feature(s) of the claims over the prior art.

Inventive step

Document 1 is the only document that is prior art for the consideration of inventive step and is the closest prior art. Candidates who present arguments based on document 2 lose marks.

The difference between the microcapsules disclosed in document 1 and those in the expected claims is that in the expected claims the protective colloid is a polymer or copolymer containing acrylic acid monomer units.

This protective colloid as is stated in paragraph [0007] of the application results in microcapsules with a particularly narrow size distribution and a particularly uniform shell porosity. These properties as stated in paragraph [0002] are particularly desirable for the controlled release of herbicides. Some candidates argued that this is proved in the examples. This is not the case as the examples do not contain a comparison with the prior art.

Candidates are expected to highlight the advantages of the claimed microcapsules and define the objective problem in view of document 1.
The problem is the provision of microcapsules which release herbicide at a predictable and controlled rate.

Candidates are also expected to argue why the protective colloid as defined in the expected claims is not obvious. In this respect a good argument is that document 1 only discloses protective colloids from different classes of polymers.

A further argument that attracted points is that document 1 only states that protective colloids stabilise an emulsion. The document does not suggest that the use of a particular protective colloid produces microcapsules with a particularly narrow size distribution and a particularly uniform shell porosity.
50 points are available for the arguments.

EXAMINATION COMMITTEE I Candidate No. .....

Paper B (Chemistry) 2006 - Schedule of marks

Category	Maximum Possible	Marks awarded	
		Marker	Marker
Claims	50		
Argumentation	50		
Total	100		

Sub-Committee for Chemistry agrees on ..... marks and recommends the following grade to the Examination Board:

☐ PASS
(50-100)

☐ FAIL
(0-49)
COMPENSABLE FAIL
(45-49, in case the candidate sits the examination for the first time)

30 June 2006

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Chairman of Examination Committee I