

## Examiners' Report - Paper A (Chemistry)

The paper related to gallium and gallium alloy particles and their use as lubricants. The information which the client provided in this case was to a large extent not novel and therefore the claims which could be presented were of a fairly narrow scope and based essentially on the coated particles and suspensions disclosed in the final paragraph on page 4 of the English text. The most successful candidates based their applications on this disclosure.

The following types of claims were expected:

1. A claim to gallium or gallium alloy particles having a diameter not larger than 150  $\mu\text{m}$  coated with a paraffin wax, a surfactant or a coupling agent. This claim should have specified that the gallium alloy contains at least 50 % by weight of gallium and has a melting point of 27-60°C.
2. A claim to a suspension of these coated particles in a liquid medium.
3. A process or use claim directed to the making of these suspensions by incorporating the coated particles into the liquid medium.
4. Two process claims directed to the manufacture of the coated particles including the process features described on page 2 of the English version of the paper and the additional step of EITHER (claim 4.1) incorporating a surfactant or a coupling agent (but not the paraffin wax) into the cooling bath OR (claim 4.2) coating the particles with a paraffin wax, a surfactant or a coupling agent after they were separated from the cooling medium.

Claims could be directed to

- a ski wax containing the coated particles suspended in a solvent conventionally used for making ski wax;
- an engine oil with the coated particles suspended therein;
- coated particles having a maximum diameter of 50  $\mu\text{m}$ ;
- coated particles of an alloy of Ga with Zn, In, Al or Sn;
- the temperature used to melt the gallium alloy and the temperature of the cooling medium
- the amount of coating agent (max. 5 % based on the Ga (alloy) particles);
- the amount of coated particles in the suspension (from 0.05 to 5 parts per 100 parts of the liquid medium);
- the type of liquid medium (alcohols, oils, aqueous solutions).

Claims to the engine oil or the ski wax drafted as independent claims were equally acceptable.

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The description should have contained a short discussion of the relevant disclosure documents D1, D2 and D3. The description was expected to highlight the novel features of the claims presented and identify the problem solved. The general problem addressed in the application was the provision of stable suspensions of coated gallium or gallium alloy particles. The description should also have been consistent with the subject-matter claimed.

Several candidates did not realise that the particles coated with paraffin wax, a surfactant or a coupling agent could be claimed as such, i.e. not only in the form of a suspension. These candidates lost a considerable number of marks.

A few candidates did not realise that stable suspensions can only be made from particles having a diameter of not greater than 150  $\mu\text{m}$  (see the bottom para. on page 4 of the English version of the paper).

When drafting a process claim of the type 4.1, some candidates did not realise that only two of the three types of coating agents (i.e. not the paraffin wax) could be added directly to the cooling medium (see page 3, lines 2-6 of the English version of the paper).

A number of candidates filed a single set of claims, which was stated in the accompanying notes to lack unity of invention. Such candidates were not able to obtain full marks, since the claims in the answer are required to fulfil the requirements of unity of invention. A candidate who has identified more than one invention should indicate the claims of the supplementary invention(s) in a note (See Instructions to candidates for preparing their answers, point 7). Other candidates lost marks for proposing to file separate applications for sets of claims which did not lack unity of invention with the claims of their first invention.

**EXAMINATION COMMITTEE I**

Candidate No. ....

Paper A (Chemistry) 2004 - Schedule of marks

Category	Maximum possible	Marks awarded	
		Marker	Marker
Independent claims	70		
Dependent claims	20		
Description	10		
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)

Berne, 20 August 2004

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Chairman of Examination Committee I