

# Examiners' Report/ Principal Examiner Feedback

March 2011

GCSE

360Science

GCSE Additional Science  
Multiple Choice Paper C2 (5017/01)

GCSE Chemistry  
Multiple Choice Paper C2 (5037/01)

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## 5017 Additional Science/ 5037 Chemistry (C2) Examiners' Report

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### Foundation Tier

The first four questions on this paper were generally well answered, with 77% of candidates being able to select a correct property of a metal and 87% of candidates being able to recall that alloys, such as Magnalium, are stronger than the pure metal, such as aluminium. 86% of candidates could recognise the correct symbol for magnesium.

In the atomic structure section, candidates found it hard to recall that atoms of sodium would all contain the same number of protons, with 25% thinking that atoms of sodium would contain the same number of bonds and 22% thinking that atoms of sodium would contain the same number of molecules.

Just 29% of candidates could recall the correct formula for a molecule of propane in question 9. In question 12, whilst 48% did understand that a covalent bond contains a pair of electrons, 31% believed that the bond contained a pair of ions.

Candidates found the section on polymers quite difficult. In question 14, just 24% understood that when ethene is converted to poly(ethene), ethene was a monomer, with 57% thinking that ethene was the polymer. Candidates also showed a poor understanding of how to alter the properties of a polymer, with 39% believing that to make a more flexible polymer, the amount of cross-links between the molecules should be increased; just 27% could recall that a plasticiser should be added.

The sections on carbon and on rates of reaction were generally well answered.

### Higher Tier

The first section was generally well answered and as expected higher tier candidates performed better than foundation tier on this overlap section.

Candidates understood the cracking of liquid paraffin well, with many performing well on this section.

In the section on electrolysis, 42% of candidates believed that bromine would form at the negative electrode when lead bromide was electrolysed. Out of the remaining 58% of candidates that understood that lead would be formed at the negative electrode, 42% could select the correct half equation for the reaction at the negatively charged electrode.

Candidates showed a good understanding of the chemistry of carbon dioxide, with 55% recognising the correct dot and cross diagram for its molecule and 60% understanding its properties.

Question 38, was not well answered, with just 32% of candidates understanding that as the atomic number of the halogens increased, both the boiling point and the intermolecular forces of attraction increase.

There was a poor understanding of how to change the equilibrium yield of ammonia during the Haber process, with 55% of candidates believing that increasing the

temperature would increase the yield of ammonia and 27% believing that an increase in pressure would decrease the yield of ammonia.

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