

Mark Scheme (Results)

June 2011

360Science

GCSE Additional Science
Structured Paper C2 (5018F/1F)

GCSE Chemistry
Structured Paper C2 (5038F/1F)

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**5018F & 5038F Mark Scheme
June 2011**

Question Number	Answer	Allow	Reject/ Ignore	Mark
1 (a)	iron;		Ignore symbols	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
1 (b)	carbon;		Ignore symbols	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
1 (c)	nitrogen;		Ignore symbols	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
1 (d)	bromine;		Ignore symbols	(1)

Question Number	Answer	Allow	Reject	Mark
2 (a)	magnesium / Mg (+ hydrochloric acid →) magnesium chloride / MgCl ₂ + hydrogen / H ₂ ; ; Mixture of words and correct symbols allowed eg magnesium (+ hydrochloric acid →) magnesium chloride + H ₂ ; ;	Allow 1 mark for 1 error in equation	H MgCl ₂ MgCl ₂ MgCL ₂	(2)

Question Number	Answer	Allow	Reject	Mark
2(b)	A flask / conical flask ; B gas jar / measuring cylinder ;		Other items	(2)

Question Number	Answer	Allow	Reject/ Ignore	Mark																				
2 (c)	<table border="1"> <thead> <tr> <th>experiment</th> <th>change</th> <th>faster</th> <th>slower</th> <th>no effect</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>use powdered magnesium</td> <td>✓ ;</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>use colder acid</td> <td></td> <td>✓ ;</td> <td></td> </tr> <tr> <td>4</td> <td>collect the gas in a syringe</td> <td></td> <td></td> <td>✓ ;</td> </tr> </tbody> </table>	experiment	change	faster	slower	no effect	2	use powdered magnesium	✓ ;			3	use colder acid		✓ ;		4	collect the gas in a syringe			✓ ;			(3)
experiment	change	faster	slower	no effect																				
2	use powdered magnesium	✓ ;																						
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4	collect the gas in a syringe			✓ ;																				

Question Number	Answer	Allow	Reject/ Ignore	Mark
2 (d)	use thermometer / temperature rise / measure temperature (before and after) / feels hot ;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
3(a)(i)	electron;		symbol e	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
3(a)(ii)	nucleus;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
3(b)(i)	2.8 ;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
3(b)(ii)	Ne ;		Ignore neon Reject NE or ne	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
3(b)(iii)	full outer shell / 8 electrons in the outer shell ;	no need to gain or lose electrons	ignore no spare electrons / spaces	(1)

Question Number	Answer	Allow	Reject	Mark
4(a)	any suitable use e.g. composite fibres / polymers/ bike parts / solar cells/ capacitors / nanoscale electric motors; sensors / touchscreens / stab-proof clothing / fuel cells / TV screen ;	Allow any use that makes use of one of the properties e.g. (electrical) wires / cables, computers	Wire where a fence etc is implied, e.g. chicken wire Very large scale uses e.g. overhead cables, girders etc Light bulb	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
4(b)	graphite AND lithium ; Note: Must have both for mark			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
4(c)	Any two from 1. strong (covalent) bonds ; 2. it is a giant structure / lattice ; 3. requires lot of energy / heat to break bonds ; 4. each carbon atom bonded to four other carbon atoms ;	Cannot score 1 if referring to ionic bonds etc. Cannot score 2 if referring to ionic lattice etc		(2)

Question Number	Answer	Allow	Reject/ Ignore	Mark
4 (d) (i)	too few molecules to work / not enough data to support ideas / no (scientific) proof for treatment / eq ;		Ignore references to 'very dilute' or 'small amount' Ignore idea that natural substances are ineffective	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
4(d) (ii)	covalent ;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
5 (a)	C_3H_8 ; (C_3H_6 +) H_2 ;	<p>multiples e.g. $2 C_3H_8$ $2 C_3H_6$ + $2 H_2$ etc</p> <p>If 1 formula correct scores 1 mark whatever balancing applied; if two formulae correct scores 2 marks only if balancing correct, otherwise 1 mark</p>		(2)

Question Number	Answer	Allow	Reject/ Ignore	Mark
5 (b) (i)	$3 \times 12 + 6$; (= 42)			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
5 (b) (ii)	contains (one) double bond / double bonds / $>C=C<$;		Ignore spare bonds / references to alkenes Ignore references to carbon not bonded to maximum number of hydrogens	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
5 (b) (iii)	poly(propene);	polypropene	Incorrect spelling	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
5 (b) (iv)	little or no waste / little by-products / high % reactants end up as products ;	High output compared to low input	Reject references to yield / quantity produced / energy / environment	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
5 (b) (v)	chloroethane ;		chloroethene	(1)

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