Combined Science - Chemistry - Key Stage 4

C8 Analytical Chemistry

Chromatography

Worksheet

Mr Robbins



Periodic Table of Elements

				Key:													
1 H hydrogen 1		relative atomic mass H Atomic symbol Name hydrogen 1 Atomic (proton number)															4 He helium 2
7 Li lithium 3	9 Be beryllium 4											11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10
23 Na sodium 11	24 Mg magnesium 12											27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulfur 16	35.5 Cl chlorine 17	40 Ar argon 18
39 K potassium	40 Ca calcium	45 Sc scandium	48 Ti titanium	51 V vanadium	52 Cr chromium	55 Mn manganese	56 Fe	59 Co cobalt	59 Ni nickel	63.5 Cu copper	65 Zn zinc	70 Ga gallium	73 Ge germanium	75 As arsenic	79 Se selenium	80 Br bromine	84 Kr krypton
¹⁹ Rb	20 88 Sr	21 89 Y	²² 91 Zr	23 93 Nb	24 96 Mo	25 [97] TC	101 Ru	27 103 Rh	²⁸ 106 Pd	29 108 Ag	³⁰ 112 Cd	31 115 In	32 119 Sn	33 122 Sb	³⁴ ¹²⁸ Te	35 127	³⁶ ¹³¹ Xe
133 CS	strontium 38 137 Ba	39 139 La*	2irconium 40 178 Hf	^{niobium} 41 181 Ta	184 W	186 Re	ruthenium 44 190 OS	rhodium 45 192	46 195 Pt	47 197 Au	^{cadmium} 48 201 Hg	indium 49 204 TI	207 Pb	antimony 51 209 Bi	tellurium 52 [209] PO	iodine 53 [210] At	[222]
caesium 55 [223]	barium 56 [226]	lanthanum 57 [227]	hafnium 72 [267]	tantalum 73 [270]	tungsten 74 [269]	rhenium 75 [270]	osmium 76 [270]	iridium 77 [278]	platinum 78 [281]	gold 79 [281]	80 [285]	thallium 81 [286]	lead 82 [289]	bismuth 83 [289]	polonium 84 [293]	astatine 85 [293]	radon 86 [294]
Fr francium 87	Ra radium 88	Ac*	Rf rutherfordium 104	Db dubnium 105	Sg seaborgium 106	Bh bohrium 107	HS hassium 108	Mt meitnerium 109	Ds darmstadtium 110	Rg roentgenium 87	Cn copemicium 112	Nh nihonium 113	FI flerovium 114	Mc moscovium 115	Lv livermorium 116	Ts tennessine 117	Og organesson 118

* The lanthanides (atomic numbers 58 - 71) and the Actinides (atomic numbers 90 - 103) have been omitted. Relative atomic masses for **Cu** and **CI** have not been rounded to the nearest whole number.



Recap questions:

- 1. What is a mixture?
- 2. What is a solution?
- 3. What is a solvent?
- 4. What is a solute?
- 5. What is solubility?
- Chromatography questions
- 1. Why must the line be drawn in pencil?
- 2. Why must the pencil line be higher than top of the solvent?



Answers

Recap questions

- 1. Two or more substances that are not bonded
- 2. When a solute is mixed into a solvent
- 3. A liquid a solute dissolves in
- 4. A solid that dissolves into a solvent
- 5. How easily a substance dissolves

Chromatography questions

1. So the ink doesn't smudge and ruin the chromatogram

2. To ensure the solvent carries the inks up the stationary phase



Independent task

Chromatography is a technique used to separate a ______ of soluble chemicals. The mixture is placed on a ______ phase, which is often paper. The stationary phase is sat in the _____ phase, which is often water. As the mobile phase rises up the stationary phase the chemical mixture ______ and is carried up. The more _____ the chemical is the quicker it will travel up the stationary phase. This causes the chemicals to ______ out creating a chromatogram

Keywords: Separate Mobile Stationary Mixture Dissolves Soluble



