



Answer all the questions below.

1. The relative atomic mass of an atom (A_r) is the mass of an atom compared to ^{12}C , use the periodic table to complete the table below.

Element	A_r	Element	A_r
hydrogen		lead	
helium		iodine	
carbon		copper	
nitrogen		potassium	
oxygen		calcium	
aluminium		phosphorus	

2. What is a molecule?

3. Calculate the relative formula mass (M_r) then the mass of 1 mole for the following compounds.

Substance	chemical formula	Relative Formula mass/ M_r	Mass of 1mole/g
ammonia	NH_3		
water	H_2O		
methane	CH_4		
carbon dioxide	CO_2		
sulphur dioxide	SO_2		
sodium chloride	NaCl		
calcium bromide	CaBr_2		

Substance	chemical formula	Relative Formula mass/ M_r	Mass of 1mole/g
glucose	$C_6H_{12}O_6$		
Sodium nitrate	$NaNO_3$		
Calcium phosphate	$Ca_3(PO_4)_2$		
Aluminium carbonate	$Al_2(CO_3)_3$		

Answers

1. The relative atomic mass of an atom (A_r) is the mass of an atom compared to ^{12}C , use the periodic table to complete the table below.

Element/symbol	A_r	Element/symbol	A_r
hydrogen	1	lead	207
helium	4	iodine	127
carbon	12	copper	63.5
nitrogen	14	potassium	39
oxygen	16	calcium	40
aluminium	27	phosphorus	31

2. What is a molecule? *A small group of atoms*

3. Calculate the relative formula mass (M_r) then the mass of 1 mole for the following compounds.

substance	chemical formula	relative formula mass/ M_r	Mass of 1 mole/g
ammonia	NH_3	$14+3=17$	17g
water	H_2O	$16+2=18$	18g
methane	CH_4	$12+4=16$	16g
carbon monoxide	CO	$12+16=28$	28g
sulphur dioxide	SO_2	$32+32=64$	64g
sodium chloride	NaCl	$23+35.5=58.5$	58.5g
calcium bromide	CaBr_2	$40+160=200$	200g
glucose	$\text{C}_6\text{H}_{12}\text{O}_6$	$72+12+96=180$	180g
Sodium nitrate	NaNO_3	$23+ 14+ 48=85$	85g
Calcium phosphate	$\text{Ca}_3(\text{PO}_4)_2$	$120+ 62+128=300$	310g
Aluminium carbonate	$\text{Al}_2(\text{CO}_3)_3$	$54+ 36+144=234$	234g