

SCIENCE (Chemistry)

Chemical Calculations Using Mole(I) - Revision of Formula

Name: _____ () Class: _____ Date: _____

Revision Notes

Common Ion in the Periodic Table

Group 1	Group 2	Group 3	Group 5	Group 6	Group 7
Li ⁺	Be ²⁺	B ³⁺	N ³⁻	O ²⁻	F ⁻
Na ⁺	Mg ²⁺	Al ³⁺		S ²⁻	Cl ⁻
K ⁺	Ca ²⁺				

Other common ions

Cation (Positive ion)

Anion (Negative Ion)

Silver	Ag ⁺	Copper(I)	Cu ⁺	Hydroxide	OH ⁻	Sulphate	SO ₄ ²⁻
Iron(II)	Fe ²⁺	Copper(II)	Cu ²⁺	Nitrate	NO ₃ ⁻	Sulphite	SO ₃ ²⁻
Iron(III)	Fe ³⁺	Nickel	Ni ²⁺	nitride	N ³⁻	sulphide	S ²⁻
Lead(II)	Pb ²⁺	Zinc	Zn ²⁺	Carbonate	CO ₃ ²⁻		
Lead(IV)	Pb ⁴⁺	Ammonium	NH ₄ ⁺	oxide	O ²⁻		

Exercise

1) Write the chemical name for each of the following ion

- | | | |
|---------------------------------------|--|--|
| a) Li ⁺ _____ | b) Na ⁺ _____ | c) Mg ²⁺ _____ |
| d) Ca ²⁺ _____ | e) Al ³⁺ _____ | f) O ²⁻ _____ |
| g) F ⁻ _____ | h) N ³⁻ _____ | i) S ²⁻ _____ |
| j) Cl ⁻ _____ | k) Fe ²⁺ _____ | l) Cu ⁺ _____ |
| m) Fe ³⁺ _____ | n) Cu ²⁺ _____ | o) Pb ²⁺ _____ |
| p) Ag ⁺ _____ | q) Pb ⁴⁺ _____ | r) Zn ²⁺ _____ |
| s) NH ₄ ⁺ _____ | t) OH ⁻ _____ | u) H ⁺ _____ |
| v) NO ₃ ⁻ _____ | w) CO ₃ ²⁻ _____ | x) SO ₄ ²⁻ _____ |

2) Write the formula of the ions

Positive Ion (Cation) e.g Lithium, Li ⁺		
a.	Sodium ion	
b.	Hydrogen ion	
c.	Ammonium ion	
d.	Magnesium ion	
e.	Calcium ion	
f.	Copper(I) ion	
g.	Copper(II) ion	
h.	Iron(II) ion	
i.	Iron(III) ion	
j.	Lead(II) ion	
k.	Zinc ion	
l.	Silver ion	
m.	Manganese(VII) ion	
n.	Manganese(IV) ion	

Negative Ion (Anion) e.g Fluoride F ⁻		
o.	Fluoride ion	
p.	Chloride ion	
q.	Bromide ion	
r.	Iodide ion	
s.	Oxide ion	
t.	Sulphide ion	
u.	Sulphite ion	
v.	Sulphate ion	
w.	Carbonate ion	
x.	Nitride ion	
y.	Nitrate ion	
z.	Hydroxide ion	

3) Write the chemical formula for each of the following compounds.

- | | | |
|----|---------------------|-------|
| a) | sodium sulphate | _____ |
| b) | zinc hydroxide | _____ |
| c) | Iron (II) carbonate | _____ |
| d) | iron(III) carbonate | _____ |
| e) | magnesium sulphide | _____ |
| f) | beryllium chloride | _____ |
| g) | aluminium nitrate | _____ |
| h) | mercury (II) oxide | _____ |
| i) | copper(II) oxide | _____ |
| j) | copper(I) oxide | _____ |
| k) | ammonium hydroxide | _____ |

4) Fill in the **chemical symbols** for the ionic compound formed.

Cation \ Anion	Chloride, Cl^-	Fluoride, F^-	Hydroxide, OH^-	Nitrate, NO_3^-	Oxide, O^{2-}	Carbonate, CO_3^{2-}	Sulphate, SO_4^{2-}
Potassium, K^+	KCl						
Sodium, Na^+			NaOH				
Calcium, Ca^{2+}							
Magnesium, Mg^{2+}							
Ammonium, NH_4^+							
Copper(I), Cu^+							
Copper(II), Cu^{2+}							
Zinc, Zn^{2+}							
Iron(II), Fe^{2+}							
Iron(III), Fe^{3+}							

5) Give the chemical name for each of the following compounds.

- a) $\text{Mg}(\text{OH})$ _____
- b) $\text{Pb}(\text{NO}_3)_2$ _____
- c) Li_2SO_4 _____
- d) Al_2O_3 _____
- e) CuCO_3 _____
- f) Cu_2CO_3 _____
- g) FeCl_2 _____
- h) $\text{Fe}(\text{OH})_3$ _____
- i) ZnCO_3 _____
- i) CaSO_4 _____
- k) $(\text{NH}_4)_2\text{CO}_3$ _____