1.81×10^23(NH4 2SO4 molecules = ZH atoms
Z= 1.81×10^23×8
Z= 1.45×10^24 H atoms.

COMPOSITION OF COMPOUNDS

Examples

- What mass of chromium, Cr is contained in 35.80g of (NH4)2Cr2O7.(FW of (NH4)2Cr2O7 = 252g/mol)
  Solution
  252g of (NH4)2Cr2O7 contained 104gCr.
  35.8g of (NH4)2Cr2O7 will contain Xg , Cr.
  X=14.77gCr
  Alternatively,
  I mol(NH4)2Cr2O7= 252g(NH4)2Cr2O7
  Xmole(NH4)2Cr2O7=35.8g(NH4)2Cr2O7
  X=35.8/252
  X=0.142mol(NH4)2Cr2O7
  But 1 mol(NH4)2Cr2O7 =2 mol of Cr atoms
  0.142mol(NH4)2Cr2O7=Y mol of Cr atoms.
  Y= 0.142×2= 0.284molCr atoms
  Also 1molCr=52.0gCr
  0.248molCr=zgCr
  Z=0.284×52
  Z=14.77gCr.

- What Mass of Potassium chlorate KClO3 would contain 40.0g of Oxygen (FW of KClO3 =122.6g/mol).
  Solution
  122.6g KClO3 contained 48g of O
  X KClO3 will contain 40g of O
  X=122.6×40/48
  X=102.16g of KClO3
  Alternatively
  I mol of O atoms =16.0g of O atoms
  X mole of O atoms= 40.0g of O atoms
  X=1×40/16=2.5mol of O atoms
  But 1 mol of KClO3=3 mol of O atoms
  Ymol of KClO3=2.5mol of O atoms
  Y=1×2.5/3
  Y= 0.833mol of KClO3
  Also 1 mol of KClO3= 122.6g KClO3
  0.833mol of KClO3=Zg KClO3
  Z=0.833×122.6
  Z=102.16gKClO3.
- What mass of Sulphur dioxide,SO2, would contain the same mass of Oxygen as is contained in 33.7g of arsenic pentoxide,As2O5(FW of So2 = 64.1g/mol, FW of AS2O5=229.8g/mol
  Solution
  229.8g AS2O5 contain 80g of O