1. What mass of CO2 is produced by the combustion of 1.00 mol of CH4?

CH4(g) + 2 O2(g) → CO2(g) + 2 H2O(ℓ)

1. What mass of H2O is produced by the combustion of 1.00 mol of CH4?

CH4(g) + 2 O2(g) → CO2(g) + 2 H2O(ℓ)

1. What mass of HgO is required to produce 0.692 mol of O2?

2 HgO(s) → 2 Hg(ℓ) + O2(g)

1. What mass of NaHCO3 is needed to produce 2.659 mol of CO2?

2 NaHCO3(s) → Na2CO3(s) + H2O(ℓ) + CO2(g)

1. How many moles of Al can be produced from 10.87 g of Ag?

Al(NO3) 3(s) + 3 Ag → Al + 3 AgNO3

1. How many moles of HCl can be produced from 0.226 g of SOCl2?

SOCl2(ℓ) + H2O(ℓ) → SO2(g) + 2HCl(g)

1. How many moles of O2 are needed to prepare 1.00 g of Ca(NO3)2?

Ca(s) + N2(g) + 3 O2(g) → Ca(NO3) 2(s)

1. How many moles of C2H5OH are needed to generate 106.7 g of H2O?

C2H5OH(ℓ) + 3 O2(g) → 2 CO2(g) + 3 H2O(ℓ)

1. What mass of O2 can be generated by the decomposition of 100.0 g of NaClO3?

2 NaClO3 → 2 NaCl(s) + 3 O2(g)

1. What mass of Li2O is needed to react with 1,060 g of CO2?

Li2O(aq) + CO2(g) → Li2CO3(aq)

1. What mass of Fe2O3 must be reacted to generate 324 g of Al2O3?

Fe2O3(s) + 2 Al(s) → 2 Fe(s) + Al2O3(s)

1. What mass of Fe is generated when 100.0 g of Al are reacted?

Fe2O3(s) + 2 Al(s) → 2 Fe(s) + Al2O3(s)

1. What mass of MnO2 is produced when 445 g of H2O are reacted?

H2O(ℓ) + 2 MnO4−(aq) + Br−(aq) → BrO3−(aq) + 2 MnO2(s) + 2 OH−(aq)

1. What mass of PbSO4 is produced when 29.6 g of H2SO4 are reacted?

Pb(s) + PbO2(s) + 2 H2SO4(aq) → 2 PbSO4(s) + 2 H2O(ℓ)

1. If 83.9 g of ZnO are formed, what mass of Mn2O3 is formed with it?

Zn(s) + 2 MnO2(s) → ZnO(s) + Mn2O3(s)

1. If 14.7 g of NO2 are reacted, what mass of H2O is reacted with it?

3 NO2(g) + H2O(ℓ) → 2 HNO3(aq) + NO(g)

1. If 88.4 g of CH2S are reacted, what mass of HF is produced?

CH2S + 6 F2 → CF4 + 2 HF + SF6

1. If 100.0 g of Cl2 are needed, what mass of NaOCl must be reacted?

NaOCl + HCl → NaOH + Cl2