Stoichiometry Practice "gA - gB"

4.85 How many g of B₂H₆ will react with 3.00 mol of O₂?

$$B_2H_6(l) + 3O_2(g) \longrightarrow B_2O_3(s) + 3H_2O(l)$$

4.86 How many g of Al will react with 3.00 mol of O₂?

$$4Al(s) + 3O_2(g) \longrightarrow 2Al_2O_3(s)$$

4.87 Calculate the amount of CrCl₃ that could be produced from 50.0 g Cr₂O₃ according to the equation

$$\operatorname{Cr}_2\operatorname{O}_3(s) + 3\operatorname{CCl}_4(l) \longrightarrow 2\operatorname{CrCl}_3(s) + 3\operatorname{COCl}_2(aq)$$

4.88 A 3.5-g sample of water reacts with PCl₃ according to the following equation:

$$3H_2O(l) + PCl_3(g) \longrightarrow H_3PO_3(aq) + 3HCl(aq)$$

How many g of H_3PO_3 are produced?

4.93 Joseph Priestley discovered oxygen in the eighteenth century by using heat to decompose mercury(II) oxide:

$$2\text{HgO}(s) \xrightarrow{\Delta} 2\text{Hg}(l) + O_2(g)$$

How much oxygen is produced from 1.00×10^2 g HgO?

4.94 Dinitrogen monoxide (also known as nitrous oxide and used as an anesthetic) can be made by heating ammonium nitrate:

$$NH_4NO_3(s) \longrightarrow N_2O(g) + 2H_2O(g)$$

How much dinitrogen monoxide can be made from 1.00×10^2 g of ammonium nitrate?

4.95 The burning of acetylene (C_2H_2) in oxygen is the reaction in the oxyacetylene torch. How much CO_2 is produced by burning 20.0 kg of acetylene in an excess of O_2 ? The unbalanced equation is

$$C_2H_2(g) + O_2(g) \longrightarrow CO_2(g) + H_2O(g)$$

200	Stoichiometry Practice "gA -> 9B"
4.85	$B_2H_6(u) + 302(9) \rightarrow B_2O_3(s) + 3H_2O(u)$
	3.00 mol 02 Imol B2H6 27.68 g BzH6 _ 27.68 g → [27.7 g BzH6] 3 mol 02 Imol B2H6
4.86	4A(s) + 302(g) -> 2A(203(s)
	3.00 mol 02 4 mol Al 26.98 g Al _ [108 g Al] 3 mol 02 1 mol Al
4.87	$Cr_2O_3(s) + 3CCl_4(l) \longrightarrow 2CrCl_3(s) + 3COCl_2(a_q)$
	50.0g Cr203 Imol Cr203 Z mol CrCl3 158.35 g CrCl3 = [104 g CrCl3] 151.99 g Cr203 Imol Cr203 Imol Crcl3
ц. 88	3H2O(A) + PC13(g) -> H3PO3(aq) + 3HC1(aq)
	3.59 H20 Imol H20 Imol H3PO3 82 9 H3PO3 _ [5.3 9 H3PO3] 18.029 H20 3 mol H20 Imol H3PO3
4.93	$2 \text{HgO (s)} \xrightarrow{\Delta} 2 \text{Hg(u)} + O_2 \text{(g)}$ 1.00 × 10 ² g = 100. g
	100. g HgO 1mol HgO 1 mol Oz 32gOz = 7.39gOz 216.59g HgO 2mol HgO 1mol Oz
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4.94	NH4N036) -> N2O(g) + 2H2O(g)
	1000 g NH4NO3 Imol NH4NO3 Imol N20 44.029N20 - 55.09 80.06 g NH4NO3 Imol NH4NO3 Imol N20 N20
4.95	2 C2H2(g) +502(g) → 4CO2(g) +2H2O(g)
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