

Stoichiometric Conversions Answer Key

Review: Mole-to-Mole Conversions

- 18.00 mol O₂
- Consider the following reaction:



- 5.63 mol HNO₃
- 1.4 mol Zn(NO₂)₃
- 0.94 mol N₂O
- 6.00 mol Zn

Mole and Mass Conversions

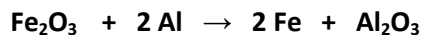
- Complete the following tables with the missing information. Find any masses or moles from the amount that you are given.

	Mercury (II) oxide	→	Mercury	+	Oxygen
Equation:	2 HgO	→	2 Hg	+	O₂
Mass (g):	5.23 g	→	4.83 g	+	0.387 g
Moles:	0.0241 mol	→	0.0241 mol	+	0.0121 mol

	Hydrogen peroxide	→	Oxygen	+	Water
Equation:	2 H₂O₂	→	O₂	+	2 H₂O
Mass (g):	35.45 g	→	16.67 g	+	18.78 g
Moles:	1.042 mol	→	0.5210 mol	+	1.042 mol

	Hydrogen	+	Oxygen	→	Water
Equation:	2 H₂	+	O₂	→	2 H₂O
Mass (g):	10.24 g	+	81.28 g	→	91.52 g
Moles:	5.079 mol	+	2.540 mol	→	5.079 mol

4. A thermite reaction is a very violent reaction between aluminum metal and iron (III) oxide. Use the equation for this reaction to answer the following questions.



- 0.964 mol Fe₂O₃**
 - 306 g Al₂O₃**
 - 0.806 mol Al₂O₃**
 - 67.9 g Fe₂O₃**
 - 8.52 x 10³ mol Fe₂O₃**
5. **113 g Cl₂**
6. In automobiles, one of the reactions common in air bags is the decomposition of sodium azide (NaN₃) into sodium and nitrogen.
- 2 NaN₃ → 2 Na + 3 N₂**
 - 64.64 g N₂**
7. **41.7 g ZnCl₂**
8. Calcium chloride reacts with sodium phosphate to produce calcium phosphate and sodium chloride.
- 3 CaCl₂ + 2 Na₃PO₄ → Ca₃(PO₄)₂ + 6 NaCl**
 - 0.909 mol CaCl₂**
 - 4.87 g Ca₃(PO₄)₂**
 - 1564 g NaCl**
 - 421 g CaCl₂**
 - 0.0341 mol Na₃PO₄**
9. **1.1954 mol O₂**
10. **Use density to convert g to mL.**