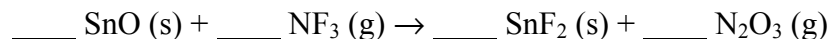


- 2) When solid tin(II) oxide (SnO) reacts with nitrogen trifluoride gas (NF₃), solid tin(II) fluoride (SnF₂) and gaseous dinitrogen trioxide (N₂O₃) are produced.



- Balance the equation with the lowest whole number coefficients.
- How many moles of tin(II) oxide would be needed to form 29.4 L of N₂O₃ at STP?
- How many grams of tin(II) oxide would be needed to completely react with 44.1 L of nitrogen trifluoride (D = 2.90 g/L)?
- When 158.9 g tin(II) oxide reacts with 62.5 g nitrogen trifluoride, which reactant is limiting?
- How many grams of the excess reactant remain after the reaction is complete?
- What is the theoretical yield of dinitrogen trioxide from these reactants?
- After the reaction, you isolate 24.8 g dinitrogen trioxide. What is the percent yield?

Answers: 1a) 2, 7, 4, 6; 1b) 43.8 mol O₂; 1c) 9.59 L Si₂H₆; 1d) O₂ is limiting; 1e) 7.1 L Si₂H₆ remaining; 1f) 107 g SiO₂; 1g) 91.4%; 2a) 3.23, 1; 2b) 3.94 mol SnO; 2c) 364 g SnO; 2d) SnO is limiting; 2e) 6.6 g NF₃ remaining; 2f) 29.90 g N₂O₃; 2g) 82.9%