

Stoichiometry Practice

Grams to moles:

1. Convert 10.0 grams of H₂ to moles of H₂
2. How many moles are in 21 grams H₂SO₄

Grams to molecules:

3. A Balloon with 5 grams of CO₂ has how many molecules?
4. You exhale 3.7x10⁻² g of CO₂ with each breath, how many molecules is that?

Grams to atoms:

5. You exhale 3.7x10⁻² g of CO₂ with each breath, How many atoms of C is that?
6. How many atoms of O are in 20.00 g of Sulfuric acid (H₂SO₄)?

Grams to Grams: $4\text{FeS}_{2(s)} + 11\text{O}_{2(g)} \rightarrow 2\text{Fe}_2\text{O}_{3(s)} + 8\text{SO}_{2(g)}$

7. Using the equation above, how many grams of Fe₂O₃ would be produced from 754 g of FeS₂ reacting completely?
8. How many grams of Oxygen would be needed to completely react with 850 g FeS₂ according the above equation?

Liters to Grams : $4\text{FeS}_{2(s)} + 11\text{O}_{2(g)} \rightarrow 2\text{Fe}_2\text{O}_{3(s)} + 8\text{SO}_{2(g)}$

9. If 5 L of oxygen completely reacted how many grams of Fe₂O₃ would theoretically be made?
10. 230 L of toxic SO₂ gas was recovered during a reaction, how many grams of FeS₂ did it take to produce it?

Moles to Grams : $2\text{Al}_{(s)} + 3\text{FeO}_{(s)} \rightarrow \text{Al}_2\text{O}_{3(s)} + 3\text{Fe}_{(s)}$

11. If 3.000 moles of Al reacted how many grams of Fe would we theoretically expect to be produced?
12. If 5.0 moles of Al₂O₃ were recovered, how many grams of FeO did we start with?

Molecules to Liters : $2\text{NaI} + \text{Br}_2 \rightarrow 2\text{NaBr} + \text{I}_2$

13. I need 3.47 x10²⁴ molecules of NaBr, how many liters of Bromine should I put into the reaction?
14. If 12.34 x 10³⁰ molecules of NaI react, what volume container should we use to capture all of the Iodine produced?