

What is Percent Yield?

Worksheet

Percent yield = (Actual yield / Theoretical yield) 100%. It shows the efficiency of a reaction in producing the expected product.

$$\text{Percent Yield} = \frac{\text{Actual Yield}}{\text{Theoretical Yield}} \times 100\%$$

Questions

- Actual = 72 g, Theoretical = 90 g. Percent yield?
A) 80%
B) 90%
C) 72%
D) 125%
- What does 100% percent yield mean?
A) Theoretical yield only
B) Actual equals theoretical
C) Reaction failed
D) Product is pure
- Theoretical 200 g, actual 150 g. Percent yield?
A) 75%
B) 100%
C) 150%
D) 50%
- Why does actual yield often differ from theoretical?
A) Theory is wrong
B) Side reactions, losses, incomplete reaction
C) Percent yield is meaningless
D) Actual is always higher
- A reaction theoretically produces 80 g of product, but only 64 g is obtained. Calculate percent yield.
- In a synthesis, the theoretical yield is 120 g and actual yield is 108 g. Find the percent yield.
- A reaction has theoretical yield 150 g and actual yield 135 g. What is the percent yield?
- Define: What is percent yield?
- Define: Formula for percent yield?
- Define: Can percent yield exceed 100%?

Answer Key

1. A) $80\% - (72/90) 100 = 80\%$
2. B) Actual equals theoretical - 100% means all predicted product formed - ideal case.
3. A) $75\% - (150/200) 100 = 75\%$
4. B) Side reactions, losses, incomplete reaction - Many real-world factors reduce efficiency.
5. Percent yield = (Actual / Theoretical) 100% Percent yield = $(64 / 80) 100\%$ Percent yield = $0.8 100\% = 80\%$
6. Percent yield = $(108 / 120) 100\%$ Percent yield = $0.9 100\% = 90\%$
7. Percent yield = $(135 / 150) 100\%$ Percent yield = $0.9 100\% = 90\%$
8. The ratio of actual yield to theoretical yield, expressed as a percentage. Shows reaction efficiency.
9. Percent yield = (Actual yield / Theoretical yield) 100%
10. No, in theory; actual > theoretical means measurement error or impurities.

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