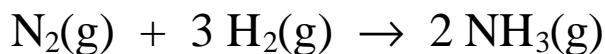


3 • What Happens When Chemicals Are Put Together?

CHEMICAL MATH



In Unit 2, we learned how to convert between grams, moles, liters, and molecules of a chemical.

In this unit, we learned how to write & balance chemical equations. Now, put those ideas together.

We introduce a NEW conversion factor made from moles and moles.

Ex: If I reacted 25.0 grams of $\text{H}_2(\text{g})$ with excess $\text{N}_2(\text{g})$, what mass of $\text{NH}_3(\text{g})$ would be produced?

Given: 25.0 g $\text{H}_2(\text{g})$

Desired: ? g $\text{NH}_3(\text{g})$

$$25.0 \text{ g H}_2(\text{g}) \times \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} =$$

1. Given: 10.8 g $\text{H}_2(\text{g})$

Desired: ? g $\text{N}_2(\text{g})$

2. G: 35.0 L $\text{N}_2(\text{g})$ at STP

D: ? g $\text{H}_2(\text{g})$

3. G: 100.0 g $\text{NH}_3(\text{g})$

D: ? L $\text{N}_2(\text{g})$

4. G: 50.5 g $\text{N}_2(\text{g})$

D: ? g $\text{NH}_3(\text{g})$

5. G: 1.00 g $\text{NH}_3(\text{g})$

D: ? L $\text{H}_2(\text{g})$