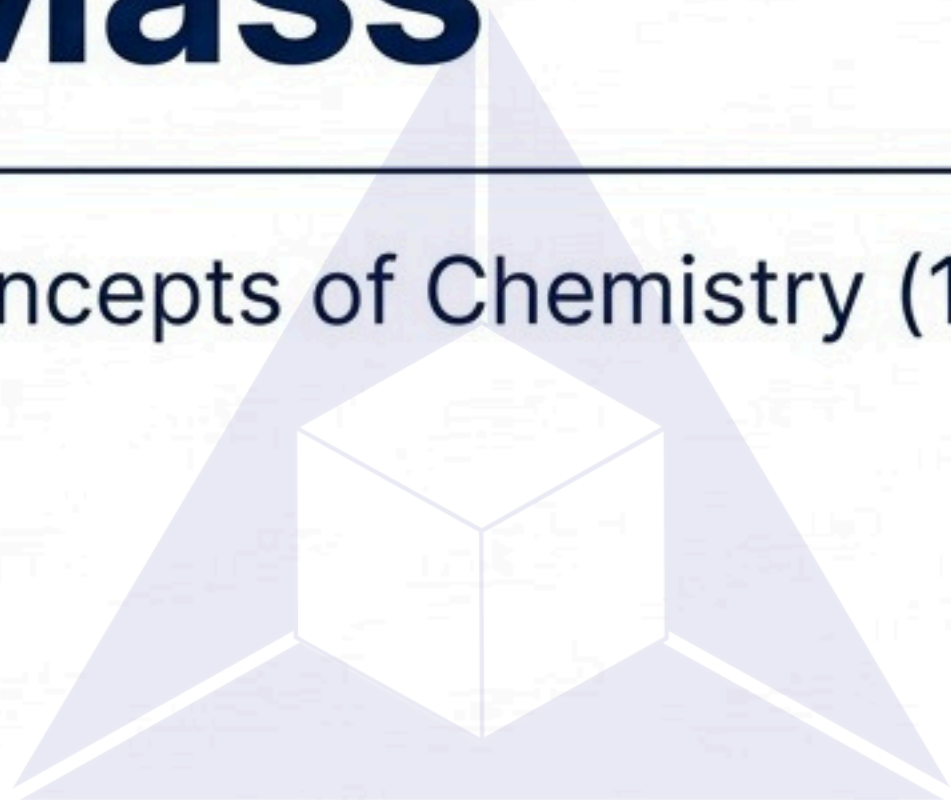


Law of Conservation of Mass

Basic Concepts of Chemistry (1.5.1)



The Origin: Exact Measurement



Mystery vs. Solution

The Mystery:

Wood burns and seemingly disappears into nothing. Where does the mass go?



The Solution:

Lavoisier performed carefully planned combustion reactions in sealed environments, measuring every reactant and product.



In all physical and chemical changes, there is no net change in mass during the process.

The Mechanism of Conservation



Atoms are neither created nor destroyed—
they merely rearrange their bonds.



You've Learned the Theory. Let's Test Them Now.

$$E=mc^2$$



Turn theory into marks with **unlimited MCQs, smart analysis, and focused revision.**

Practice Now



At prep.topall.app

Key Highlights

- » Free Study Material, Videos & Infographics
- » Push Your Limits with Level-Based Challenges
- » Climb the Leaderboard Among Fellow Aspirants
- » Practice Unlimited MCQs for NEET & JEE
- » Get Clear Explanations, Not Just Marks
- » Track Your Performance Smarter



Mathematical Formalization

$$\sum \text{Mass of Reactants} = \sum \text{Mass of Products}$$

The sum of the masses of all reacting substances is exactly equal to the sum of the masses of all products formed.

Exam Application: Apparent Mass Loss

JEE TRAP ALERT

Chunk 1: The Scenario: You are given a reaction where a solid decomposes into a gas (e.g., $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$). The question asks if the lighter mass of the solid residue proves the Law of Conservation is false.

Chunk 2: The Trap: Forgetting that gas has mass! If a gas escapes into the atmosphere, the weighed mass on the scale appears to drop.

Chunk 3: The Truth: The Law still holds perfectly; your system just leaked.

Diagnostic: Closed vs. Open Systems

 Scale Reading Before: 100g Scale Reading After: 100g	 Scale Reading Before: 100g Scale Reading After: 56g
"Closed Vessel". Gas is trapped. Mass reading is conserved perfectly.	"Open Vessel". Gas escapes. Apparent mass loss (but total mass of the universe remains conserved).

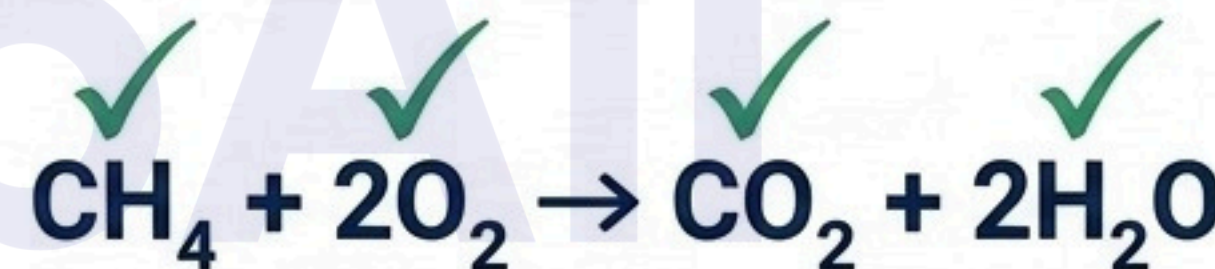
Always underline the words "open vessel" or "closed vessel" in numerical problems!

Final Synthesis

Revision Card

Key Takeaways

1. **The Core Rule:** Matter is neither created nor destroyed in chemical reactions.
2. **The Math:** $\sum \text{Mass of Reactants} = \sum \text{Mass of Products}$.
3. **The Practical Application:** This Law is the exact reason why we **MUST** balance chemical equations. Stoichiometry only works because the number of atoms on the left must perfectly match the right.





You've Learned the Theory.

Now Let's Test It.

Reading notes gets you knowledge.

Practicing MCQs gets you marks.

That's exactly what TopAll Pro is built for.

Try TopAll Pro Now

What TopAll Pro Does Differently

-  **Stuck? Snap it. Solve it. — Doubts AI**
Photo → step-by-step solution in seconds, 24/7
-  **Your AI Coach finds your blind spots**
Concept-level weakness detection — not just chapter-level
-  **4.5 Lakh+ questions. Never run out.**
13× more content than any other prep app in India
-  **Build your own test in 60 seconds**
Pick a chapter, set difficulty — AI does the rest instantly.
-  **AI Recommendation that helps you improve**
AI Recommendation Analysis your Tests and tell you where you need to improve.



Practice the moment you finish studying
Jump in while the concept is still fresh in your head

4.5L+
MCQs

1.5L+
Students

AI Powered
In-Depth Analysis