

Curiosity: Why Chemists Count in Moles

Curiosity Reading | CheAI Research Inc.

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Connection: scale and technology

Reading time: 4 minutes

Atoms and molecules are too numerous to count one by one. The mole is a bridge from laboratory amounts to particle counts. The SI defines Avogadro's constant exactly as $6.02214076 \times 10^{23} \text{ mol}^{-1}$. The conversion factor is exact, but an answer should still reflect the precision of the measured input.

Think like a chemist

1. Which unit cancels when converting particles to mol?
2. Why can equal moles have different masses?
3. What differs between one mole of H_2O and one mole of CO_2 ?

Word	Meaning	Packet
mole	fixed particle-count amount	1–20
Avogadro constant	exact particles per mole	2–7
entity	specified particle being counted	8–10