The Missing Mass in a Bicarbonate Test

Scoring guide · one credit per question · review written work against each rubric

The Missing Mass in a Bicarbonate Test

Question 1

The total mass leaving the holder is 8.40 − 5.30 = 3.10 g. Subtract the 0.90 g of water to obtain 2.20 g CO_2.

Question 2

Choice (2)

Both gaseous products have coefficient 1, so their mole amounts match in the reaction. Equal moles do not require equal masses.

Question 3

The estimate would be too high because the solid loses water vapor as well as carbon dioxide. Total mass loss includes both products.

Question 4

The CO_2 amount is 2.20/44.0 = 0.0500 mol. The 2:1 ratio gives 0.100 mol sodium bicarbonate reacted.