Checking Acid Capacity After a Gas Leaves

Base your answers on the information provided and your knowledge of chemistry. Use the 2025 Chemistry Reference Tables as needed.

A rinse simulation contains a nonvolatile acid and a dissolved acid gas. A complete base test counts the moles of OH^- used by both. In the model each mole of dissolved gas accounts for two moles of OH^-. A second test removes only the dissolved gas before measuring base use.

Equal starting portions	**OH^- used in complete base test (mol)**
P, gas retained	0.010
Q, gas removed	0.004

1 Which reading gives the base used by the nonvolatile acid alone?

(1) 0.004 mol from Q

(2) 0.006 mol from the difference

(3) 0.010 mol from P

(4) 0.014 mol from the sum

2 Calculate the dissolved gas amount that was present in P. [1]

Answer and work

3 A student says the base-use difference equals the number of moles of gas. Explain how the model ratio changes the interpretation. [1]

Answer and work

A new portion from the same rinse loses only half its original gas. The nonvolatile acid amount stays unchanged.

4 Find the moles of OH^- expected in the complete base test for the new portion. [1]

Answer and work