Checking Salt Identity With a Flame and Ion Test

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

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Question 1

Choice (1)

P and Q both give the sodium marker line, so the model identifies sodium as their common positive ion.

Question 2

The line records energy released as an excited sodium atom moves to a lower energy state in the flame. A different original anion does not remove the sodium marker from the model.

Question 3

The common line identifies sodium, while the anion tests identify chloride for P and bromide for Q. The results fit different compounds that share the same positive ion.

Question 4

P and Q supply sodium, chloride, and bromide. Including R would also introduce lithium and its 671 nm marker, which the model detector does not see.