Reading What a Channel Holds and Releases

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

A model sends ten X particles and ten Y particles into a narrow channel. The two kinds have the same size, and both fit through the opening. The wall can temporarily hold particles through attraction. A plain reference channel has the same shape and does not hold either kind.

Channel	X at the outlet during the first interval	Y at the outlet during the first interval
Plain reference	10	10
Attracting wall	4	10

1 Which kind is delayed by the attracting wall in the first interval?

(1) X only

(2) Y only

(3) Both kinds

(4) Neither kind

2 Find how many of the original X particles have not reached the outlet at the end of that interval. [1]

Answer and work

The display adds no more particles. In the next interval six additional X particles leave the attracting channel. No Y particles leave then.

3 A student says the attracting channel permanently blocks six X particles because it gives a first reading of four. Evaluate the claim using both intervals. [1]

Answer and work

4 Explain why the plain channel is useful for separating attraction from a claim about particle size. [1]

Answer and work