Checking How a Model Adhesive Separates

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

A museum tests removable labels on two smooth surfaces. The labels have the same backing, adhesive, and width. When a label separates at the wall, nearly all adhesive stays on its backing. When the adhesive tears within itself, some adhesive stays on both surfaces.

Wall sample	Peel force (N)	Adhesive on backing after test	Adhesive on wall after test
P	2.0	Nearly all	None visible
Q	4.0	Some	Some

1 Which observation best supports separation within the adhesive on Q?

(1) The same adhesive is used on P and Q.

(2) Q takes 4.0 N to peel.

(3) Adhesive is left on both surfaces after peeling Q.

(4) No adhesive is visible on the wall after peeling P.

2 Explain why the peel force alone cannot identify where a new label separated. [1]

Answer and work

The museum will use a label only if the peel force is at least 3.0 N and there is no visible residue on the wall.

3 Use both requirements to decide whether P or Q qualifies. [1]

Answer and work

4 Compare the new adhesive with the original adhesive on wall sample Q. Identify one variable to keep the same and both results the museum should record. [1]

Answer and work