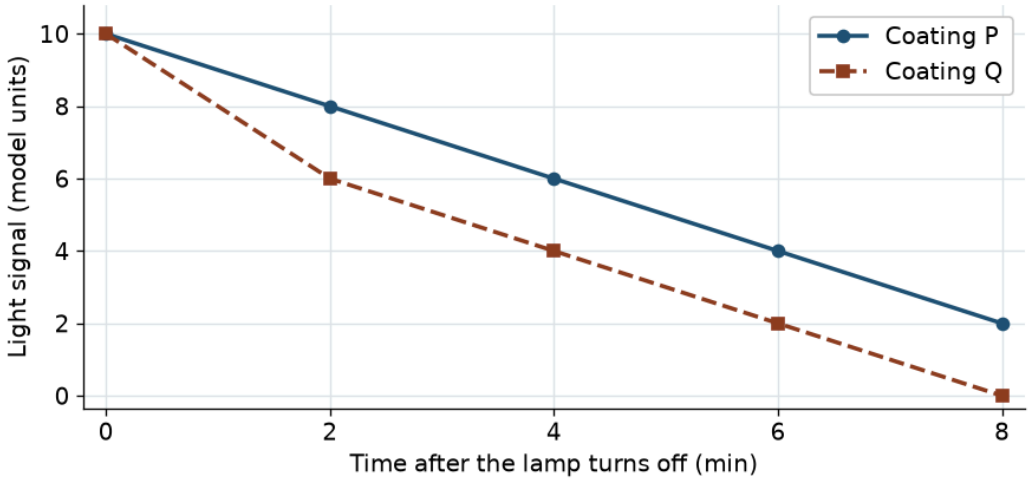
Reading Two Coatings After the Lamp Turns Off

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

A museum tests two coatings for a temporary display label. Each stores some energy from a lamp and emits light after the lamp turns off. The graph shows light measured after matched lamp exposures. A coating must give at least 5 units at 4 minutes and at most 2 units at 8 minutes.



Light readings after the two lamp exposures.

1 Which coating meets both requirements in the recorded tests?

(1) P only

(2) Q only

(3) Both coatings

(4) Neither coating

2 A student says the equal readings at the moment the lamp turns off prove the labels will stay equally bright. Evaluate the claim using a later time. [1]

Answer and work

A second exhibit requires at least 5 units at 6 minutes and at most 1 unit at 8 minutes. The lamp exposure remains unchanged.

3 Use both criteria to decide whether either coating works for the second exhibit. [1]

Answer and work

4 The team considers a different lamp exposure for P. Identify the two post-lamp readings it must compare with the second exhibit’s requirements. [1]

Answer and work