4 A cube of ice of density $0.92\,\mathrm{g\,cm^{-3}}$ and sides of length $2.0\,\mathrm{cm}$ floats in water of density $1.0\,\mathrm{g\,cm^{-3}}$.

The cube is pushed down by an external force until it is just submerged.

The force is then removed.

What is the initial acceleration of the cube?

A $0.087\,\mathrm{ms^{-2}}$ **B** $0.85\,\mathrm{ms^{-2}}$ **C** $1.2\,\mathrm{ms^{-2}}$ **D** $12\,\mathrm{ms^{-2}}$