Question

A 15 cm cube of aluminum is immersed in a beaker of water. Find the magnitude of the buoyant force acting on the cube.

Answer

$$a = 15\ cm = 0.15\ m;\ \ \rho_{water} = 1\,000\,\frac{kg}{m^3}; g = 9.8\,\frac{m}{s^2}.$$

$$\boldsymbol{F_b} = \rho_{water} g V = \rho_{water} g a^3 = \mathbf{33.075\ N}$$