# Answer on the question #64286, Chemistry / General Chemistry

**Question:**

A student determines the density of a solid by determining its mass and then immersi g it I.
50.0mL of water in a graduated cylinder.
The mass of solid is 39.364g
Volume of water and solid is 58.0mL.

What do the volume of the solid??

What's the density of the solid?

What's the specific gravity of the solid?

Will the solid float or sink?

**Answer:**

1.  What do the volume of the solid??
    The volume of the solid is:
    $$V_S = 58.0mL - 50.0mL = 8.0 \ mL$$
2.  What's the density of the solid?
    The density is the ratio of mass to volume:
    $$d = \frac{m_S}{V_S} = \frac{39.364(g)}{8.0(mL)} = 4.92g \ mL^{-1}$$
3.  What's the specific gravity of the solid?
    The specific gravity is the ratio of density of solid to the density of water:
    $$SG_S = \frac{d_S}{d_{H_2O}} = \frac{4.92g \ mL^{-1}}{1 \ g \ mL^{-1}} = 4.92$$
4.  Will the solid float or sink?
    As the specific gravity is greater than 1, the solid is denser than water, and, disregarding surface tension effects, it will sink.

Answer provided by https://www.AssignmentExpert.com