Answer on Question #52994-Physics-Mechanics-Kinematics-Dynamics

If the specific weight of the liquid is 8000N/m3, what is its density, specific volume, and specific gravity (S.G)?

Solution

$$\frac{W}{V} = 8000\,\frac{N}{m^3}.$$

The density is

$$\rho = \frac{W}{Vg} = \frac{8000\,\dfrac{N}{m^3}}{9.81\,\dfrac{m}{s^2}} = 815\,\frac{kg}{m^3}.$$

The specific volume is

$$v_g = \frac{1}{\rho} = \frac{1}{815\,\dfrac{kg}{m^3}} = 0.00123\,\frac{m^3}{kg}.$$

The specific gravity is

$$SG = \frac{\rho}{\rho_{water}} = \frac{815\,\dfrac{kg}{m^3}}{1000\,\dfrac{kg}{m^3}} = 0.815.$$