Effect of drag on falling individual ball

$W - B - D = ma \approx 0$ for terminal velocity

$$-\rho_f V g - \frac{1}{2}\rho_f C_D v^2 A + \rho V g = 0$$

$$\frac{1}{2}\rho_f C_D v^2 A = (\rho - \rho_f) V g$$

$$v^2 = 2\left(\frac{\rho}{\rho_f} - 1\right)\frac{V}{A} g C_D$$

$$= 2 g C_D \frac{\frac{4}{3}\pi R^3}{\pi R^2}\left(\frac{\rho}{\rho_f} - 1\right)$$

$$v^2 = \frac{8}{3} g C_D R \left(\frac{\rho}{\rho_f} - 1\right)$$

ρ_f in water...

$\rho_{Tridym} \approx 7$

$\rho_{gallium} \approx 6$

$C_D \approx 1$

$R = 0,5\,cm$

$v = 0,15\ m/s$