2017

Fly in the Ointment

Aim	To determine the density of a 'fly' by timing its descent through a viscous liquid.
Materials	1 liquid-filled cylinder 2 rubber bands 1 stopwatch
Method	Drop the 'fly' into the liquid and time how long it takes to fall a known distance. Use this to determine the density (see over).
Conditions	Assume a spherical fly with uniform density.
Time Limit	25 minutes
Ranking	The ranking order will be determined by the difference between the calculated density and the known density.

Team [ ]

Result [ ]

Do not write below this line

Rank [ ]

Stokes' Law

$$\eta = \frac{2gr^2}{9v}(\rho - \sigma)$$

η = viscosity of fluid   = 0.230 kg/ m·s

g = acceleration due to gravity   = 9.81 m/s^2

r = radius of 'fly'   = 2.025 mm

v = velocity

ρ = density of 'fly'   = ?????

σ = density of fluid   = 1.25 g/cm^3