Motor oil → 2.08 s travelled 10 cm

$$\text{Flow Rate} = \frac{10\text{ cm}}{2.08\text{ s}} = 4.80\text{ cm/s}$$

$$\text{Flow Rate} = \frac{\text{Distance (cm)}}{\text{time (s)}}$$

Molasses 21.21 s for 10 cm

$$\text{Flow Rate (mol)} = \frac{10\text{ cm}}{21.21\text{ s}} = 0.471\text{ cm/s}$$

Veg 2.21 s for 10 cm

$$\text{Flow Rate} = \frac{10\text{ cm}}{2.21\text{ s}} = 4.524\text{ cm/s}$$

honey 1 min 20 sec for 10 cm

80 seconds

$$\text{Flow Rate} = \frac{10\text{ cm}}{80\text{ s}} = 0.125\text{ cm/s}$$

Detergent

3.83 s for 10 cm

$$\text{Flow Rate} = \frac{10\text{ cm}}{3.83\text{ s}} = 2.61\text{ cm/s}$$

The higher the viscosity of a substance, the lower its flow rate.
In other words:

Thickness Speed

High Viscosity = low flow rate

Low Viscosity = high flow rate

Ex) Water & Alcohol have low viscosity but a high flow rate.

Molasses & honey have a high viscosity and low flow rate.

Factors that Affect Viscosity

1) Temperature

As you increase temperature, you decrease a fluid's viscosity. As you decrease temperature, you increase a fluid's viscosity. (It is opposite for gasses)

Ex) Trying to get through the mall when everyone is moving slow(Cold) parcels or moving fast (Hot).

2) Concentration

-The amount of a substance dissolved in a specific volume.

-Increasing the concentration(Bulkiness), increases the viscosity.

Ex) Trying to get through the mall when everyone is carrying parcels.

3) Attractive Forces

If the attractive forces are strong, it is difficult for the particles to pull away thereby the fluid flows slowly and is more viscous.

ex)Moving through a crowded mall where everyone is wearing velcro sneakers. Your sneakers will stick to someone else's velcro.

4) Particle Size

The smaller the particle size, the faster the fluid flows and is less viscous.

Ex) Moving though a crowded mall either in a small group or a large group