

Viscosity of Lava



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Temperature

The higher the temperature the lower the viscosity

Crystal Content

The higher the volume of solid being carried the higher the viscosity.

Gas Content

The higher the volume of gas in the fluid the lower the viscosity.

NOTE

If the gases get trapped in a viscous magma the pressure of gas can build up causing an eruption.

Water Content

The higher the volume of water the lower the viscosity.

Composition

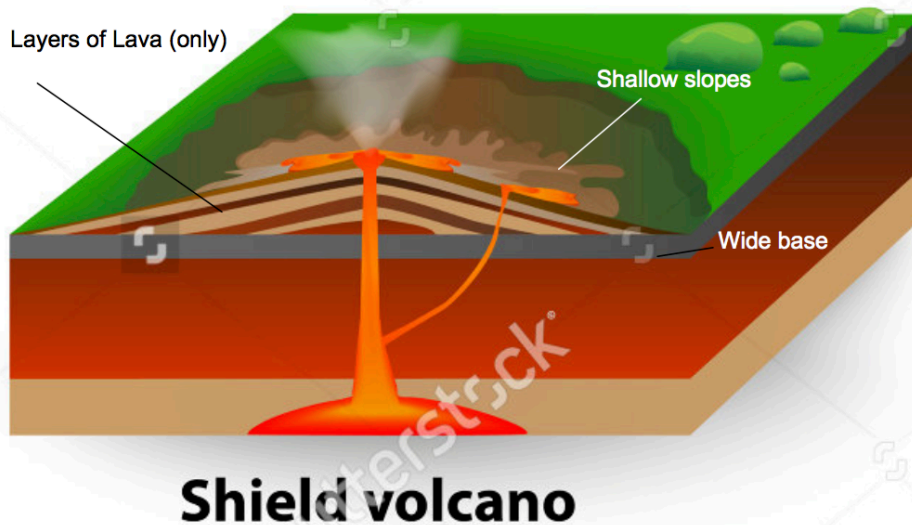
The higher the proportion of silica the higher the viscosity.

Magma Type	Example	Relative Viscosity	Volcano Type	Volcano Name
Silicic	Rhyolite	Higher	Explosive	Strato
Basic	Basalt	Lower	Effusive	Shield

Shield-volcanoes (Effusive)

Wide, low and shallow due to how far the extremely un-viscose, basic, lava travels before cooling.

Example 5.1.1: Shield-volcano



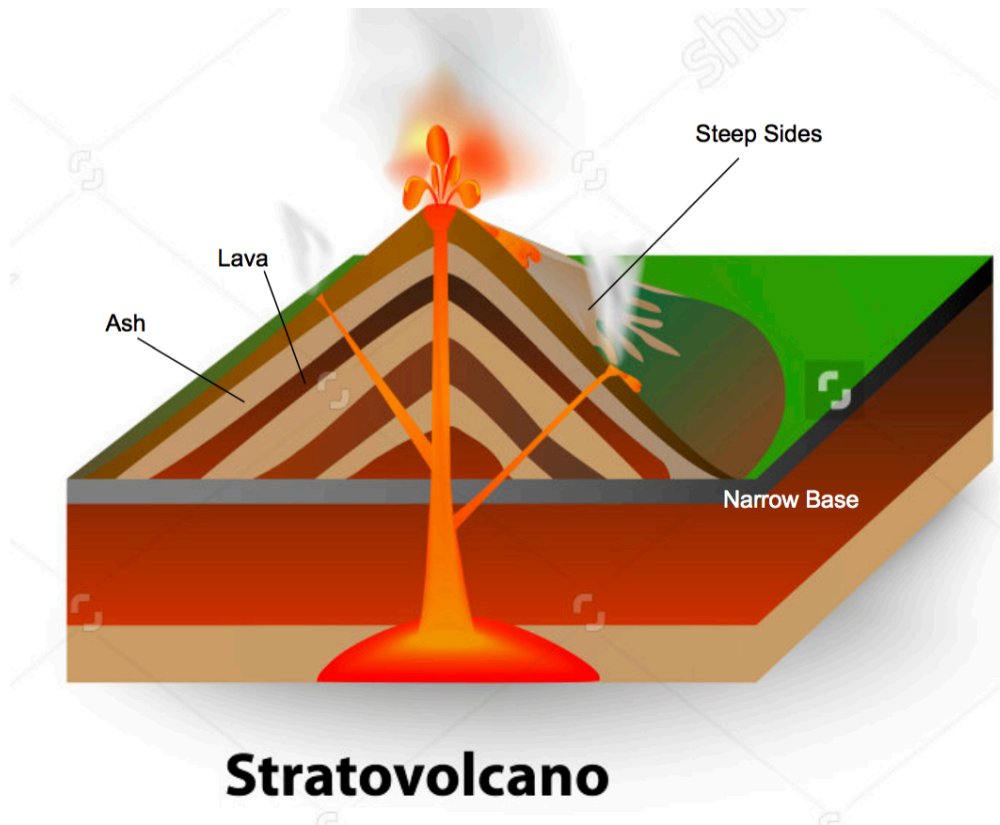
Stratovolcanoes (Explosive)

Shaped due to the highly viscose, silicic, lava and the eruption process.

Eruption Process

1. Vent is blocked.
2. Gases build up causing pressure to rise.
3. This causes a violent eruption when the pressure becomes too much for the plug to bear.
4. As the magma/lava cools it forms a new plug repeating the process.

Example 5.1.1: Stratovolcano



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