

Viscosity and Pressure in Volcanic Eruptions Worksheet

Part 1: Pressure Relief / Degassing

<i>Instructions:</i> Shake two sealed carbonated beverage cans for 10 seconds.
What happened when you opened the can quickly (in less than one second)?
What happened when you opened the can slowly (taking 30 seconds)?
How does this relate to how an agitated volcano with lots of dissolved gasses in its magma erupts?

Part 2: Viscosity

<i>Instructions:</i> Use marbles to rank the viscosity of the fluids from lowest to highest:				
Lowest Viscosity	1. _____	2. _____	3. _____	Highest Viscosity
What do you notice about the higher viscosity fluid vs. the lower viscosity fluid when you stir/blow bubbles through them?				

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Viscosity (continued)

How might this relate to the strength of an eruption in a volcano with built up pressure?

Concluding Questions

How do viscosity and time allowed for a volcano to degas effect the explosiveness an eruptions?

How might understanding characteristics of explosive eruptions have human or engineering applications?