

Liquid glass?

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Many people do not even suspect that there are many objects and things around us that have amazing properties. In this article we will discuss the hardness of some materials and interesting results, which are based on these properties.

In 1994, a large earthquake hit Los Angeles, killing 57 people, and hiding more than 5,000. The material damage reached incredible 20 billion dollars. Such earthquakes make us think. How hard is the earth under our legs? What does the concept of hardness mean?

Coal Pek seems hard, but it is not. In fact, it is a very viscous fluid, i.e. It is liquid. Viscosity is a measure of resistance to spreading. Olive oil is approximately 100 times viscous water, and honey is 100 times viscous oil. The viscosity of the pope is 230 billion water viscosity times. In Cleveland University over Pes, the most long-lasting experiment in the world. In 1927, Pek was placed in a funnel. For 90 years, only 9 drops fell out of it. No one was present in the fall of the drop. In 1988, the keeper of the experiment John Mainston was close to see how the drop drops. He came out of the room to pour in tea and missed the cherished moment. You can watch this experiment online, but since the last drop fell in 2014, it is unlikely that you will be able to see the cherished fall in the coming years.

Another substance that is a viscous liquid is glass. Glass is unusual in that it is an amorphous body. Silicon dioxide molecules do not constitute an ordered structure. The glass is cooled so quickly that when moving from liquid into a "solid" state, the molecules do not have time to lines into an ordered crystal structure. Visually solid glass makes atoms or molecules that are so strongly fastened with each other chemically that they cannot slip close to others.

However, the absence of an ordered crystal structure makes the glass still liquid, even when it is in a visually solid state. It is because of the fact that the glass is actually liquid, in the window frames in old houses, where the windows have stood for several decades, it is clearly noticeable that the glass is thinner at the top bey. This is due to the fact that some of the glass over many years already glass is top down. Therefore, in such houses, the windows rattling in the frames, because at the top they are already thinner than the clearance prepared for them. Sometimes this effect is so noticeable that even the gap is formed on top.

Go ahead. What do we know about the inner part of the Earth? Under the earth's crust is a mantle that is responsible for the movement of tectonic plates and earthquakes. Is it solid or liquid? We will never be able to see the mantle directly, but we can observe Lava, which is a hot stone. It can be imagined that the mantle is very similar to it. Mantle should be liquid because she needs to flow, right? In fact, no, because the mantle is a solid body. The waves with the motor earthquake can spread through the mantle, but these waves cannot move through the liquid, which is a confirmation

of its hardness. What way the solid stone flows? The answer is in the imperfection of crystals, which may not be enough of several atoms. The viscosity of the mantle is like a glass viscosity, only a few orders of magnitude higher. The mantle becomes like a liquid, but only in geological segments of time. Pek is a liquid that can flow so slowly, which seems like a solid body. And the land mantle is a solid body that behaves like a liquid if you wait long enough.

Hardness and plasticity has no absolute value, but only relative. And all the bodies are actually liquid and solid at the same time. When in the case of a huge mass and force, then the difference loses the value. The solid definitions that we create for ourselves lead to incorrect ideas and viscous rumors.