

Formation and geology of obsidian

Obsidian is a volcanic rock solidified in an instantaneous way without the crystallized groundmass. It is, in other words, a natural glass, with low contents of volatile materials (gases and water). The formation is reserved to very specific chemical composition - with high amount of silica and alkaline elements, sodium and potassium and can be defined as being around a „glass optimum”. Moreover, the formation is volcanologically restricted to eruptions of viscous lavas stripped of their volatiles and effective cooling conditions (subaerial domes, magma and water/ice interaction) in various geotectonic settings of volcanism (the island arcs, active continental margins, intraplate environment), current and past. The glass is unstable at normal surface conditions. It is subjected to hydration, alteration and/or recrystallisation processes. How these conditions modify the access and chemistry, consequently, characterisation of obsidian, worldwide?