

Biogenic silica content of Geochemical Reference Sample JLK-1 measured by Molybdenum-yellow absorbance method

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Many diatoms frustules are contained in sediment of lakes and marshes, and the content of diatom is used as an index of showing primary production in the past. The purpose of this study is to establish a method of measuring the content of biogenic silica by using the Geochemical Reference Sample JLK-1 in Lake Biwa.

Samples used are, first decomposed organic matter and carbonate and then dried in the drying oven. Next, sodium carbonate is added in poly-container. As a third step, put the sample in shaking water bath and take fixed volume of solution from this container at every ten minutes. Lastly add molybdenum-ammonium liquid to this solution and measure absorbance value of violet light. By using this absorbance and photometry method, the content of silica can be measured.

Content of silica in solution changes with time. In the beginning the content of silica grow exponentially. But in the course of time, the content of silica changes linearly. This breaking point shows the completion of dissolution of biogenic silica and from this point only the dissolution of mineral silica starts.