

BENTONITE OCCURRENCES IN THE BUDATÉTÉNY–SÓSKÚT REGION (CENTRAL HUNGARY)

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The investigated area is situated on a calcareous plateau in south-west from the center of Budapest. The bentonite occurrences are intercalated in Sarmatian limestones of the Tinnye Formation. There are 1–6 bentonite strata with thickness of 0.1–0.8 m. They were produced by the hydrodiagenetic alteration of rhyolitic-dacitic tuffs (Galgavölgy Rhyolite Tuff) based on their stratigraphical position, mineral composition, and total silica vs. alkali content (Fig. 1).

According to the XRD and thermal analysis, the montmorillonite content of the bentonite samples is between 58–96 wt%. The other mineralogical components of the samples are biotite, quartz, zircon and apatite. These bentonites are characterized by the absence of cristobalite.

The predominant exchangeable cation is Ca^{2+} , and subordinately Na^+ . The cation exchange capacity (meqv/100g) of the samples are the follows: Ca^{2+} (0.57–0.75), Mg^{2+} (0.12–0.24), Na^+ (0.02–0.33) (Budatétény)

and Ca^{2+} (0.90–0.95), Mg^{2+} (0.06), Na^+ (0.05–0.07) (Sóskút).

The swelling capacity ranges from 6.6 to 14.0 (natural) and from 14 to 29 (activated, ml/2g).

According to the K/Ar dating on biotite crystals, the age of these bentonites is between 11.7 (Sóskút) and 13.2 (Budatétény) Ma.

Frequently a Sarmatian Foraminifera association of *Elphidium* (*E. macellum*, *E. aculeatum*) and *Cibicides lobatulus* is present in the samples.

The bentonite and the limestone in this region was mined underground at Budatétény (Endre Gallery) and Nagytétény between 1934 and 1965. The main product was limestone blocs, which were used in construction. The bentonite was used predominantly to purify mineral oils and bond foundry sands, and it was exported as activated bentonite to Germany (former East Germany), Poland and former Czechoslovakia.

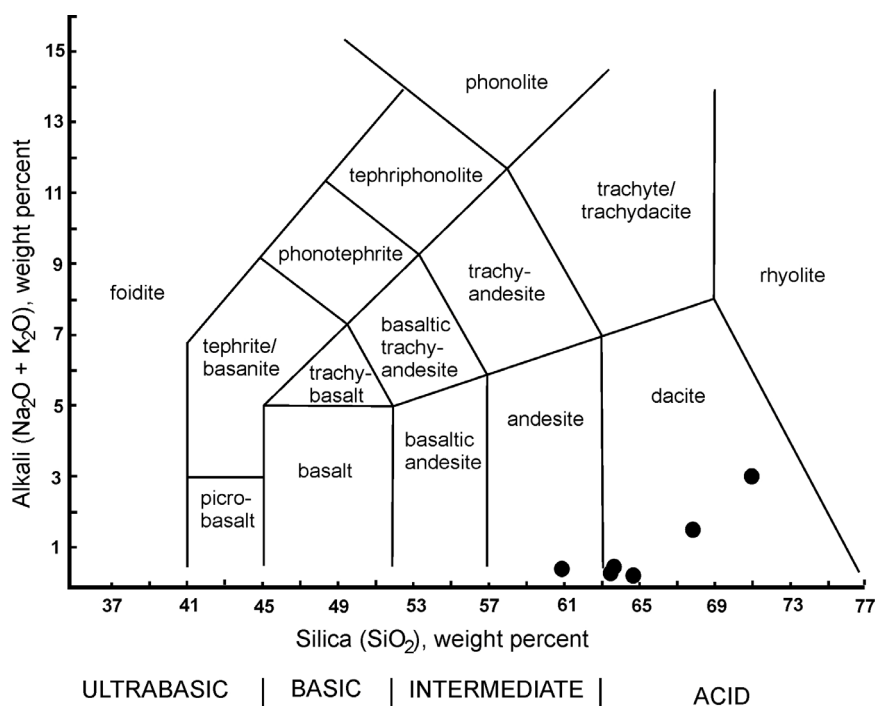


Fig. 1. Total silica vs. alkali diagram of the studied bentonites.