

# Zeolitová mineralizace z Libé u Chebu (Česká republika)

## Zeolite mineralization from Libá near Cheb (Czech Republic)

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### Abstract

A new occurrence of zeolite mineralization with phillipsite-K, phillipsite-Ca, thomsonite-Ca, natrolite and gonnardite has been discovered in an active basalt quarry in the Libá village near Cheb (Czech Republic). Phillipsites form druses of white or colourless crystals up to 1 mm in size in small cavities. Chemical analyses of phillipsite-K correspond to the empirical formula  $(K_{1.85}Na_{1.24}Ca_{0.83}Ba_{0.27}Sr_{0.01})_{\Sigma 4.20}(Al_{6.28}Si_{10.33}O_{32}) \cdot 12H_2O$  and phillipsite-Ca to  $(Ca_{1.84}K_{1.33}Na_{0.14}Ba_{0.06}Sr_{0.37})(Al_{5.97}Si_{10.20}O_{32}) \cdot 12H_2O$ . The unit-cell parameters were refined from the powder X-ray data for phillipsite-Ca as:  $a$  9.924(2),  $b$  14.309(3),  $c$  8.7414(14) Å,  $\beta$  124.92(2)° and  $V$  1017.8(5) Å<sup>3</sup>. Thomsonite-Ca forms transparent hemispheric radial aggregates up to 1 cm in size. Its unit-cell parameters refined from the powder X-ray data are  $a$  13.105(5),  $b$  13.857(5),  $c$  13.247(6) Å and  $V$  2266.7(6) Å<sup>3</sup> and its chemical analyses correspond to the empirical formula  $Ca_{1.79}Sr_{0.18}Na_{1.05}(Al_{4.81}Si_{5.15}O_{20}) \cdot 6H_2O$ . Natrolite occurs as snow white hemispheric radial clusters. Its unit-cell parameters refined from the powder X-ray data are  $a$  18.326(7),  $b$  18.569(7),  $c$  6.594(3) Å and  $V$  2243.8(9) Å<sup>3</sup> and empirical formula is  $Na_{1.60}Ca_{0.05}(Al_{2.08}Si_{3.02}O_{10}) \cdot 2H_2O$ . Gonnardite forms colourless or white aggregates of flat acicular crystals up to 2 mm in size. Its unit-cell parameters refined from the powder X-ray data are  $a$  13.221(8),  $c$  6.6233(4) Å and  $V$  1156.9 Å<sup>3</sup> and empirical formula is  $(Na_{3.14}Ca_{2.21}Sr_{0.02})_{\Sigma 5.37}(Al_{8.92}Si_{11.41}O_{20.33}) \cdot 12H_2O$ .

**Key words:** phillipsite-K, phillipsite-Ca, thomsonite-Ca, natrolite, gonnardite, powder X-ray diffraction data, unit-cell parameters, chemical composition, Libá near Cheb, Czech Republic

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