Kochsándorite  

\[ \text{CaAl}_2(\text{CO}_3)_2(\text{OH})_4 \cdot \text{H}_2\text{O} \]

Crystal Data: Orthorhombic. Point Group: 2/m 2/m 2/m. As acicular to bladed crystals, with \{100\} and \{110\} dominant, typically in radial aggregates to 200-300 μm.

D(meas.) = 2.486(20)  D(calc.) = 2.514  Fluoresces pale yellow under SW and LW UV. Dissolves quickly in dilute HCl with effervescence.

Optical Class: Biaxial (-). \( \alpha = 1.597(3) \)  \( \beta = \text{n.d.} \)  \( \gamma = 1.603(6) \)  2V(meas.) = n.d.

Cell Data: Space Group: Pnma. \[ a = 15.564(6) \quad b = 5.591(4) \quad c = 9.112(4) \quad Z = 4 \]

X-ray Powder Pattern: Mány, Tatabánya coalfield, Hungary.
5.9154 (100), 7.8607 (87), 4.3718 (86), 7.7830 (62), 2.9570 (48), 2.9455 (44), 1.9021 (26)

Chemistry:

(1) Mány, Tatabánya coalfield, northeastern Transdanubian Mountains, Hungary; analyses by prompt gamma activation analysis (PGAA), energy-dispersive X-ray spectrometry (EDS), H\(_2\)O by thermogravimetry, CO\(_2\) by mass spectrometry correspond to \( \text{Ca}_{0.9}\text{Al}_2(\text{CO}_3)_{1.9}(\text{OH})_4 \cdot 1.3\text{H}_2\text{O} \).

Mineral Group: Dundasite group.

Occurrence: A secondary mineral formed by the contemporaneous weathering of böhmite, pyrite and calcite in brown coal beds.

Association: Intimately intergrown with gibbsite, commonly associated with calcite and gypsum; quartz, pyrite, böhmite, dolomite, calcite, gibbsite, kaolinite, illite, alumohydrocalcite, gypsum, felsőbányaite.

Distribution: From the I/A shaft of the coal mine in Mány, Tatabánya coalfield, northeastern Transdanubian Mountains, Hungary.

Name: Honors Sándor Koch (1896-1983), Professor in the Department of Mineralogy, Petrography and Geochemistry, József Attila University (now University of Szeged), Hungary.

Type Material: Hungarian Natural History Museum, Budapest (568/2004), Herman Ottó Museum, Miskolc (2004-72) and Minerals of the Carpathian Basin (Lajos Kövecses-Varga collection), Siófok, Hungary (12004/1-3).