## Camgasite $CaMg(AsO_4)(OH)\cdot 5H_2O$



**Crystal Data:** Monoclinic. *Point Group:* $2/m$. As euhedral to anhedral crystals, to 0.15 mm, prismatic along [010], showing {100}, {010}, and {001}, as radial aggregates in crusts. *Twinning:* Polysynthetic ∥ {010}, seen in thin section.

**Physical Properties:** *Cleavage:* {100}, {001}, distinct. *Fracture:* Conchoidal. Hardness = ∼2 D(meas.) = 2.4(1) D(calc.) = 2.335

**Optical Properties:** Transparent to translucent. *Color:* Colorless. *Luster:* Vitreous. *Optical Class:* Biaxial (+). *Orientation:* $X = b$. $\alpha = 1.540(2)$ $\beta = [1.548]$ $\gamma = 1.563(2)$ 2V(meas.) = 74°

**Cell Data:** *Space Group:* $P2_1/m$ (probable). $a = 9.18(3)$ $b = 7.63(2)$ $c = 16.27(5)$ $\beta = 128.0(5)°$ Z = 4

**X-ray Powder Pattern:** Johann mine, near Wittichen, Germany. 7.28 (10), 6.42 (10), 4.00 (8), 3.28 (8), 3.21 (8), 3.02 (8), 2.96 (8)

**Chemistry:**

| | (1) | (2) |
|---|---|---|
| $As_2O_5$ | 37.9 | 37.03 |
| MgO | 12.9 | 12.98 |
| CaO | 18.9 | 18.07 |
| $H_2O$ | [30.3] | 31.92 |
| Total | [100.0] | 100.00 |

(1) Johann mine, near Wittichen, Germany; by electron microprobe, $H_2O$ by difference; corresponds to $Ca_{1.06}Mg_{1.01}(AsO_4)_{1.04}(OH)_{1.02}\cdot 4.82H_2O$. (2) $CaMg(AsO_4)(OH)\cdot 5H_2O$.

**Occurrence:** A secondary mineral in a Co–U-rich zone in a polymetallic mineral deposit.

**Association:** Monohydrocalcite, gypsum, calcite, rapidcreekite, nováčekite, erythrite, hörnesite.

**Distribution:** In the Johann mine, near Wittichen, Black Forest, Germany.

**Name:** For *Ca*, calcium, *Mg*, magnesium, and *As*, arsenic, in the composition.

**Type Material:** Stuttgart University, Stuttgart, Germany.

**References:** (1) Walenta, K. and P.J. Dunn (1989) Camgasit, ein neues Calcium-Magnesiumarsenatmineral der Zusammensetzung $CaMg(AsO_4)(OH)\cdot 5H_2O$ von Wittichen im mittleren Schwarzwald. Aufschluss, 40, 369–372 (in German with English abs.). (2) (1991) Amer. Mineral., 76, 2021 (abs. ref. 1).