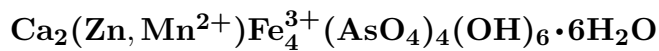


Ogdensburgite



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Crystal Data: Orthorhombic, pseudo-hexagonal. *Point Group:* $2/m\ 2/m\ 2/m$, $mm2$, or 222 . As bladed crystals and platelets, to 2 mm; in thin crusts.

Physical Properties: *Cleavage:* On {001}, perfect; on {010}, {100}, poor. Hardness = ~ 2
D(meas.) = 3.11 D(calc.) = 3.39

Optical Properties: Semitransparent. *Color:* Bright reddish orange; dark brownish red on oxidized surfaces. *Streak:* Pale orange. *Luster:* Resinous on cleavages.
Optical Class: Biaxial (-). *Pleochroism:* Strong; X = yellow; Y = Z = red-brown. *Orientation:* X = c; Y = b; Z = a. *Absorption:* $X \ll Y < Z$. $\alpha = 1.715(5)$ $\beta = 1.783(5)$ $\gamma = 1.785(5)$
 $2V(\text{meas.}) = 5^\circ\text{--}10^\circ$

Cell Data: *Space Group:* $Bmmm$, $Bmm2$, $B2mm$, $Bm2m$, or $B222$. $a = 11.351\text{--}11.381$
 $b = 14.829\text{--}14.837$ $c = 6.555\text{--}6.569$ $Z = 2$

X-ray Powder Pattern: Sterling Hill, New Jersey, USA.
14.8 (100), 4.52 (30), 2.656 (30), 2.793 (25), 2.734 (25), 7.47 (20), 5.70 (20)

Chemistry:

| | (1) | (2) |
|--------------------------------|---------|-------|
| As ₂ O ₅ | 38.2 | 40.3 |
| SiO ₂ | 0.5 | 0.0 |
| Al ₂ O ₃ | 1.0 | 0.0 |
| Fe ₂ O ₃ | 31.3 | 29.4 |
| MnO | 2.2 | 2.4 |
| ZnO | 3.1 | 3.0 |
| MgO | 0.5 | 0.0 |
| CaO | 10.8 | 10.1 |
| H ₂ O | [12.4] | 14.8 |
| Total | [100.0] | 100.0 |

(1) Sterling Hill, New Jersey, USA; by electron microprobe, average of two analyses; total Fe as Fe₂O₃, confirmed by microchemical test, total Mn as MnO, H₂O by difference. (2) Ojuela mine, Mexico; by electron microprobe, total Fe as Fe₂O₃, total Mn as MnO, H₂O by moisture evolution analysis; corresponds to $\text{Ca}_{1.86}(\text{Zn}_{0.38}\text{Mn}_{0.35})_{\Sigma=0.73}\text{Fe}_{3.80}(\text{AsO}_4)_{3.62}(\text{OH})_{5.72} \cdot 5.64\text{H}_2\text{O}$.

Occurrence: On oxidized ore from a metamorphosed stratiform zinc orebody (Sterling Hill, New Jersey, USA); in oxidized ore from an arsenic-rich polymetallic hydrothermal ore deposit (Ojuela mine, Mexico).

Association: Parasymplesite, köttigite, yukonite, legrandite, pharmacosiderite, willemite, franklinite, sphalerite (Sterling Hill, New Jersey, USA); villyaellenite, arseniosiderite, chalcophanite, adamite, Fe–Mn oxides (Ojuela mine, Mexico).

Distribution: From Sterling Hill, Ogdensburg, New Jersey, USA. In the Ojuela mine, Mapimí, Durango, Mexico. At the Clara mine, near Oberwolfach, Black Forest, Germany.

Name: For its occurrence at Ogdensburg, New Jersey, USA.

Type Material: National Museum of Natural History, Washington, D.C., USA, 146880.

References: (1) Dunn, P.J. (1981) Ogdensburgite, a new calcium-zinc-ferric iron arsenate mineral from Sterling Hill, New Jersey. *Mineral. Record*, 12, 369–370. (2) (1982) *Amer. Mineral.*, 67, 858 (abs. ref. 1). (3) Kampf, A.R. and P.J. Dunn (1987) Ogdensburgite from Mapimi and new data for the species. *Amer. Mineral.*, 72, 409–412.