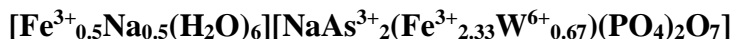


Natrowalentaite

Crystal Data: Orthorhombic. *Point Group:* 2/m 2/m 2/m. As blades flattened on {100} and elongated along [010] to 200 μm and exhibiting {100}, {001} and {011}.

Physical Properties: *Cleavage:* Perfect on {100}. *Tenacity:* n.d. *Fracture:* n.d. *Hardness =* n.d. $D(\text{meas.}) = 2.91(2)$ $D(\text{calc.}) = 2.93$

Optical Properties: [Semitransparent.] *Color:* Bright greenish yellow. *Streak:* n.d.

Luster: [Vitreous.]

Optical Class: Biaxial (-). $\alpha = 1.650(3)$ $\beta = 1.728(3)$ $\gamma = 1.772(3)$ $2V(\text{meas.}) = 71(2)^\circ$

Orientation: $X = a$, $Y = c$, $Z = b$. *Dispersion:* Distinct, $r > v$.

Cell Data: *Space Group:* *Imma*. $a = 25.770(3)$ $b = 7.3250(8)$ $c = 10.522(1)$ $Z = 4$

X-ray Powder Pattern: Griffins Find gold deposit, Western Australia.

12.95 (100), 3.020 (27), 2.940 (15), 6.72 (14), 2.759 (11), 4.41 (10), 1.7840 (10)

Chemistry:	(1)
Na ₂ O	3.52
K ₂ O	0.34
CaO	1.76
Fe ₂ O ₃	21.4
WO ₃	17.0
P ₂ O ₅	14.8
As ₂ O ₃	21.7
<u>H₂O</u>	<u>[12.3]</u>
Total	92.82

(1) Griffins Find gold deposit, Western Australia; average of 11 electron microprobe analyses, H₂O calculated from structure; corresponds to $\text{Na}_{1.09}\text{K}_{0.07}\text{Ca}_{0.30}\text{Fe}^{3+}_{2.57}\text{W}^{6+}_{0.70}\text{As}^{3+}_{2.10}\text{P}_2\text{O}_{21}\text{H}_{12.02}$.

Mineral Group: Walentaite group, Walentaite subgroup.

Occurrence: On fracture surfaces in iron-stained heavily weathered rock as a product of supergene alteration of primary sulfide and arsenide minerals.

Association: Natropharmacosiderite, jarosite.

Distribution: From the Griffins Find gold deposit, ~15 km northwest of Lake Grace and 275 km southeast of Perth, Western Australia.

Name: The prefix, *natro*, indicates dominant sodium replacing calcium in *walentaite*.

Type Material: Natural History Museum of Los Angeles County, Los Angeles, California, USA (66703).

References: (1) Grey, I.E., W.G. Mumme, A.R. Kampf, C.M. MacRae, and N.C. Wilson (2019) Natrowalentaite, a new mineral from the Griffins Find gold deposit, Western Australia. *Australian J. Mineral.*, 20(1), 7-15. (2) (2021) *Amer. Mineral.*, 106, 162-163 (abs. ref. 1). (3) Grey, I.E., R. Hochleitner, C. Rewitzer, A. Riboldi-Tunnicliffe, A.R. Kampf, C.M. MacRae, W.G. Mumme, M. Kaliwoda, H. Friis, and C.U. Martin (2020) The walentaite group and the description of a new member, alcantarillaite, from the Alcantarilla mine, Belalcázar, Córdoba, Andalusia, Spain. *Mineral. Mag.*, 84 (3), 412-419.