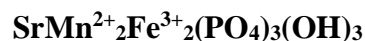


**Strontioperloffite**

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As crystals to 0.4 mm, tabular to bladed on {001}; as hemispherical aggregates of crystals to 0.5 mm.

**Physical Properties:** *Cleavage:* Excellent on {100}. *Tenacity:* Brittle. *Fracture:* Uneven. Hardness = 4.5 D(meas.) = n.d. D(calc.) = 3.89

**Optical Properties:** Translucent. *Color:* Brownish orange. *Streak:* Pale orange. *Luster:* Vitreous. *Optical Class:* Biaxial (-).  $\alpha = 1.805(4)$   $\beta = 1.820(4)$   $\gamma = 1.829(4)$   $2V(\text{calc.}) = 75^\circ$  Nonpleochroic.

**Cell Data:** *Space Group:*  $P2_1/m$ .  $a = 9.1830(18)$   $b = 12.349(3)$   $c = 5.0081(10)$   $\beta = 100.23(3)^\circ$   $Z = 2$

**X-Ray Diffraction Pattern:** Spring Creek mine, near Wilmington, South Australia, Australia. 3.158 (100), 3.106 (53), 1.921 (53), 9.055 (32), 5.122 (23), 2.938 (22), 2.985 (20)

Chemistry:	(1)
P <sub>2</sub> O <sub>5</sub>	31.90
As <sub>2</sub> O <sub>5</sub>	0.10
Fe <sub>2</sub> O <sub>3</sub>	[23.62]
FeO	[1.55]
Al <sub>2</sub> O <sub>3</sub>	0.17
MnO	19.41
CaO	0.38
SrO	8.90
BaO	8.65
Na <sub>2</sub> O	0.05
<u>H<sub>2</sub>O</u>	<u>[4.08]</u>
Total	98.81

(1) Spring Creek mine, near Wilmington, South Australia, Australia; average electron microprobe analysis supplemented by IR spectroscopy, Fe<sup>3+</sup>/Fe<sup>2+</sup> proportioned on Fe<sup>3+</sup>+Al = 2.00 apfu, H<sub>2</sub>O calculated from structure analysis; corresponds to (Sr<sub>0.57</sub>Ba<sub>0.38</sub>Na<sub>0.01</sub>) $\Sigma=0.96$ (Mn<sup>2+</sup><sub>1.83</sub>Fe<sup>2+</sup><sub>0.14</sub>Ca<sub>0.05</sub>) $\Sigma=2.02$ (Fe<sup>3+</sup><sub>1.98</sub>Al<sub>0.02</sub>) $\Sigma=2.00$ (P<sub>3.00</sub>As<sub>0.01</sub>) $\Sigma=3.01$ O<sub>11.98</sub>(OH)<sub>3.02</sub>.

**Mineral Group:** Bjarebyite group.

**Occurrence:** A secondary mineral in cavities in quartz veins from low-temperature hydrothermal solutions.

**Association:** Copper, cuprite, mitridatite, rhodochrosite, quartz, goethite.

**Distribution:** From the dumps of the Spring Creek copper mine, ~10 km south of Wilmington, South Australia, Australia.

**Name:** The strontian analog of *perloffite*.

**Type Material:** South Australian Museum, Adelaide, South Australia (G34219).

**References:** (1) Elliott, P. (2019) Strontioperloffite, SrMn<sup>2+</sup><sub>2</sub>Fe<sup>3+</sup><sub>2</sub>(PO<sub>4</sub>)<sub>3</sub>(OH)<sub>3</sub>, a new bjarebyite-group mineral from the Spring Creek mine, South Australia, Eur. J. Mineral., 31(3), 549-555. (2) (2021) Amer. Mineral., 106, 1543 (abs. ref. 1).