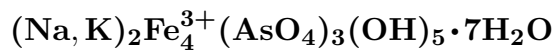


# Sodium pharmacosiderite



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**Crystal Data:** Cubic. *Point Group:*  $\bar{4}3m$ . Cubic crystals, to 1 mm, in aggregates.

**Physical Properties:** *Cleavage:* On {001}, imperfect. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness =  $\sim 3$  D(meas.) = 2.79(4) D(calc.) = 2.90 for  $\text{Na}_2\text{Fe}_4(\text{AsO}_4)_3(\text{OH})_5 \cdot 7\text{H}_2\text{O}$ .

**Optical Properties:** Transparent to translucent. *Color:* Pale green to dull orange; pale green to colorless in thin section. *Luster:* Vitreous.

*Optical Class:* Isotropic.  $n = 1.705(4)$

**Cell Data:** *Space Group:* [ $P\bar{4}3m$ ] (by analogy to pharmacosiderite).  $a = 8.012(1)$   $Z = 1$

**X-ray Powder Pattern:** Marda, Australia.

7.99 (100), 3.27 (80), 2.831 (60), 2.416 (60), 4.61 (50), 2.532 (50), 4.00 (40)

## Chemistry:

	(1)
As <sub>2</sub> O <sub>5</sub>	36.7
Fe <sub>2</sub> O <sub>3</sub>	35.5
Na <sub>2</sub> O	5.8
K <sub>2</sub> O	2.7
H <sub>2</sub> O	19.3
Total	[100.0]

(1) Marda, Australia; by electron microprobe, total Fe as Fe<sub>2</sub>O<sub>3</sub>, H<sub>2</sub>O by the Penfield method; normalized to 100.0% from an original total of 106.2%, keeping H<sub>2</sub>O constant; then corresponding to  $(\text{Na}_{1.68}\text{K}_{0.52})_{\Sigma=2.20}\text{Fe}_{4.00}(\text{AsO}_4)_{2.87}(\text{OH})_{5.59} \cdot 6.84\text{H}_2\text{O}$ .

**Occurrence:** Initially found on a museum specimen, presumably an alteration product of arsenopyrite (Marda, Australia).

**Association:** Pharmacosiderite, scorodite, arseniosiderite, "jarosite", arsenopyrite, quartz (Marda, Australia).

**Distribution:** In Australia, from Marda, Western Australia, and at Mafeking, Victoria. From the Gold Hill mine, Tooele Co., Utah, USA.

**Name:** In allusion to *sodium* in the composition and its relation to *pharmacosiderite*.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, 146392.

**References:** (1) Peacor, D.R. and P.J. Dunn (1985) Sodium-pharmacosiderite, a new analog of pharmacosiderite from Australia and new occurrences of barium-pharmacosiderite [= barian pharmacosiderite]. Mineral. Record, 16, 121–124. (2) (1986) Amer. Mineral., 71, 230 (abs. ref. 1) (3) Kokinos, M. and W.S. Wise (1993) The Gold Hill mine, Tooele County, Utah. Mineral. Record, 24, 11–22.