Riomarinaite

\[ \text{Bi(OH)SO}_4 \cdot \text{H}_2\text{O} \]

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As acicular crystals elongated on [001], to 60 µm, as hollow masses and botryoidal crusts to several millimeters; rarely as globular aggregates composed of tufts and spherulites.

Hardness = 2-3 \hspace{1cm} D(meas.) = n.d. \hspace{1cm} D(calc.) = 4.80(3)

*Luster:* Vitreous. 
*Optical Class:* n.d.

**Cell Data:** *Space Group:* \( P_2_1/n \). \( a = 6.0118(3) \) \hspace{1cm} \( b = 13.3355(6) \) \hspace{1cm} \( c = 6.4854(4) \) \hspace{1cm} \( Z = 4 \) 
(for synthetic Bi(OH)SO\(_4\) \cdot H\(_2\)O)

**X-ray Powder Pattern:** Falcacci stope, Rio Marina iron mine, Elba, Tuscany, Italy. 
4.2598 (100), 5.4530 (42), 3.3350 (42), 5.1152 (37), 3.1127 (36), 5.1926 (32), 2.9151 (22)

**Chemistry:**

\[
\begin{array}{ll}
\text{Bi}_2\text{O}_3 & 68.86 \\
\text{SO}_3 & 24.28 \\
\text{H}_2\text{O} & 6.86 \\
\text{Total} & 100.00
\end{array}
\]

(1) Falcacci stope, Rio Marina iron mine, Elba, Tuscany, Italy; wet chemical analysis, H\(_2\)O by difference; corresponding to Bi\(_{1.02}\)H\(_{2.64}\)S\(_{1.05}\)O\(_6\).

**Occurrence:** A weathering product from the decomposition of bismuthinite and cosalite.

**Association:** Bismoclite, bismutite, cannonite, anglesite, hydroniumjarosite, plumbojarosite.

**Distribution:** Falcacci stope, Rio Marina iron mine, east coast of Elba Island, Tuscany, Italy.

**Name:** For the mine that produced the first specimens.

**Type Material:** Bavarian State Collection for Mineralogy, Munich, Germany (MSM 27074).