Nikischerite $Fe^{2+}_6Al_3(OH)_{18}[Na(H_2O)_6](SO_4)_2 \cdot 6H_2O$

Crystal Data: Hexagonal. *Point Group*: $\bar{3}$. As micaceous {00*1} plates, to 4 mm, that form radiating, irregular spherical aggregates and seams to 1 cm.

Physical Properties: *Cleavage*: Perfect on {00*1}. *Fracture*: Irregular. *Tenacity*: Brittle. Hardness = 2 D(meas.) = 2.33(2) D(calc.) = 2.30

Optical Properties: Transparent to translucent. *Color*: Green to grayish white; colorless to grayish white in transmitted light. *Streak*: Pale grayish green. *Luster*: Dull to greasy.
Optical Class: Uniaxial (-). ω = 1.560(1) ε = not determinable. Non-pleochroic.

Cell Data: *Space Group*: $R\bar{3}$. a = 9.352(7) c = 33.08(4) Z = 3

X-ray Powder Pattern: Huanuni tin mine, Dalence Province, Oruro Department, Bolivia.
10.980 (100), 5.539 (60), 3.674 (50), 2.425 (30), 1.932 (30), 2.624 (25), 4.311 (20)

Chemistry:

	(1)
Na_2O	2.43
FeO	43.59
Al_2O_3	14.35
SO_3	13.54
H_2O	[35.06]
Total	108.97

(1) Huanuni tin mine, Dalence Province, Oruro Department, Bolivia; average of 18 electron microprobe analyses supplemented by IR spectroscopy, H_2O calculated; corresponding to $Na_{0.85}Fe^{2+}_{6.55}Al_{3.04}S_{1.83}O_8(OH)_{18}(H_2O)_{12}$.

Mineral Group: Shigaite group.

Occurrence: On and within clay matrix in a hydrothermal vein polymetallic tin deposit.

Association: Pyrite, pyrrhotite, siderite, cronstedtite, vivianite.

Distribution: From the Huanuni tin mine, Dalence Province, Oruro Department, Bolivia.

Name: Honors American geologist and mineral dealer Anthony (Tony) J. *Nikischer* (b. 1949), who discovered the mineral and who has for many years supplied rare minerals for scientific study.

Type Material: Canadian Museum of Nature, Ottawa, Ontario, Canada (CMNMC 83499).

References: (1) Huminicki, D.M.C., F.C. Hawthorne, J.D. Grice, A.C. Roberts, and J.L. Jambor (2003) Nikischerite, a new mineral from the Huanuni tin mine, Dalence Province, Oruro Department, Bolivia. Mineral. Record, 34, 155-158. (2) Huminicki, D.M.C. and F.C. Hawthorne (2003) The crystal structure of nikischerite, $NaFe^{2+}_6Al_3(SO_4)_2(OH)_{18}(H_2O)_{12}$, a mineral of the shigaite group. Can. Mineral., 41, 79-82. (3) (2003) Amer. Mineral., 88, 1838 (abs. refs. 1 and 2).