

Vendidaite**Al₂(SO₄)(OH)₃Cl • 6H₂O**

Crystal Data: Monoclinic. *Point Group:* 2/m. As platy crystals, to 0.3 mm, flattened on (010).

Physical Properties: *Cleavage:* Perfect on {010}. *Fracture:* n.d. *Tenacity:* Brittle.
Hardness = 2-2.5 D(meas.) = 1.97(1) D(calc.) = 1.974

Optical Properties: Transparent. *Color:* Colorless, white in aggregates. *Streak:* n.d.
Luster: Vitreous.

Optical Class: Biaxial (+). $\alpha = 1.522(2)$ $\beta = 1.524(2)$ $\gamma = 1.527(2)$ $2V(\text{meas.}) = 75(15)^\circ$
 $2V(\text{calc.}) = 79^\circ$ *Orientation:* $Z = b$; X and Y lie in the ac plane.

Cell Data: *Space Group:* C2/c. $a = 11.9246(16)$ $b = 16.134(2)$ $c = 7.4573(9)$ $\beta = 125.815(2)^\circ$
 $Z = 4$

X-ray Powder Pattern: La Vendida mine, Antofagasta Region, Atacama desert, Chile.
3.855 (100), 4.849 (94), 4.366 (80), 4.030 (75), 6.78 (59), 3.285 (59), 2.435 (52)

Chemistry:	(1)	(2)
Al ₂ O ₃	28.51	29.59
Fe ₂ O ₃	1.39	
SO ₃	22.38	23.23
Cl	9.87	10.29
H ₂ O	38.8	39.21
<u>-O = Cl₂</u>	<u>2.23</u>	<u>2.31</u>
Total	98.72	100.00

(1) La Vendida mine, Antofagasta Region, Atacama desert, Chile.; average of 5 electron microprobe analyses, H₂O by gas chromatography, OH, SO₄ and H₂O confirmed by IR spectroscopy; corresponding to Al_{1.96}Fe³⁺_{0.06}(SO₄)_{0.98}Cl_{0.98}(OH)_{3.12}•5.98H₂O.

(2) Al₂(SO₄)(OH)₃Cl•6H₂O.

Occurrence: A secondary mineral in a weathered copper sulfide deposit.

Association: Aubertite, magnesioaubertite, belloite, eriochalcite, alunite, kaolinite, halloysite.

Distribution: At the La Vendida mine, 3 km WNW of Sierra Gorda, Antofagasta Region, Atacama desert, Chile.

Name: For the La *Vendida* mine, from which the first samples were collected.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (4335/1).

References: (1) Chukanov, N.V., S.V. Krivovichev, A.P. Chernyatieva, G. Möhn, I.V. Pekov, D.I. Belakovskiy, K.V. Van, and J.A. Lorenz (2013) Vendidaite, Al₂(SO₄)(OH)₃Cl•6H₂O, a new mineral from La Vendida Copper Mine, Antofagasta Region, Chile. *Can. Mineral.*, 51(4), 559-568.
(2) (2015) *Amer. Mineral.*, 100, 1654 (abs. ref. 1).