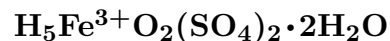


Rhomboclase



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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As thin tabular crystals, {001}, {010}, {100}, {111}, {011}, with other modifying forms noted, giving a rhombic outline, to 2 cm; may be radially bladed in stalactites.

Physical Properties: *Cleavage:* Perfect on {001}, good on {110}. *Fracture:* Conchoidal to fibrous. *Tenacity:* Cleavage folia are flexible. Hardness = 2 D(meas.) = 2.23 D(calc.) = 2.210 Slowly soluble in H_2O .

Optical Properties: Transparent. *Color:* White, gray, pale yellow, may be pale green or pale blue if impure; colorless in transmitted light. *Luster:* Subvitreous to pearly.

Optical Class: Biaxial (+). *Orientation:* $X = c$; $Y = a$; $Z = b$. $\alpha = 1.534$ $\beta = 1.553$ – 1.555 $\gamma = 1.634$ – 1.638 $2V(\text{meas.}) = 27^\circ$

Cell Data: *Space Group:* $Pnma$. $a = 9.724(4)$ $b = 18.333(9)$ $c = 5.421(4)$ $Z = 4$

X-ray Powder Pattern: Cerro de Pasco, Peru.

9.18 (> 100), 3.29 (18), 4.05 (15), 3.33 (15), 3.11 (11), 3.05 (10), 4.75 (7)

Chemistry:

	(1)	(2)	(3)
SO_3	49.27	48.00	49.88
Fe_2O_3	24.54	25.72	24.87
FeO	0.35		
CuO	0.03		
CaO	0.10		
H_2O	[25.54]	26.6	25.25
rem.	0.15		
Total	[99.98]	100.3	100.00

(1) Szomolnok, Slovakia; remnant is $\text{MgO} + \text{Na}_2\text{O}$, H_2O stated determined by difference. (2) Cerro de Pasco, Peru, H_2O by TGA. (3) $\text{H}_5\text{FeO}_2(\text{SO}_4)_2 \cdot 2\text{H}_2\text{O}$.

Occurrence: An uncommon secondary mineral formed by alteration of pyrite, especially in an arid climate; typically of post-mining origin.

Association: Szomolnokite, copiapite, römerite, voltaite, epsomite, halotrichite, melanterite, chalcantite, pyrite.

Distribution: From Smolník (Szomolnok), 16 km northeast of Rožňava, Slovakia. At Lesenceistvánd, Hungary. In the Nikitovka mercury deposit, Gorlovka, Ukraine. At the Esperanza mine, Cerro de Pasco, Peru. In Chile, from Alcaparrosa, near Cerritos Bayos, southwest of Calama, Antofagasta. Large crystals in the Socavon mine, Oruro, Bolivia. In the USA, from the Copper Queen mine, Bisbee, Cochise Co., and in the Magma mine, Superior district, Pinal Co., Arizona.

Name: From the Greek for *rhomb*, for the typical rhombic crystal outline, and for *to break*, for its perfect cleavage.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 436–437. (2) Mereiter, K. (1974) Die Kristallstruktur von Rhomboklas, $\text{H}_5\text{O}_2^+\text{Fe}[\text{SO}_4]_2 \cdot 2\text{H}_2\text{O}^-$. *Tschermaks Mineral. Petrog. Mitt.*, 21, 216–232 (in German with English abs.). (3) Van Tassel, R. (1974) X-ray powder data of rhomboclase. *Mineral. Mag.*, 39, 611–612.