

Iranite**Pb₁₀Cu(CrO₄)₆(SiO₄)₂(F, OH)₂**

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Crystal Data: Triclinic. *Point Group:* 1 (probable). As equant to flattened euhedral crystals, to 1 mm, showing prominent { $\bar{1}00$ }, {010}, {011}, and also { $\bar{1}0\bar{1}$ }, {00 $\bar{1}$ }, {10 $\bar{2}$ }.
Twinning: Common on (12 $\bar{1}$).

Physical Properties: Hardness = n.d. D(meas.) = n.d. D(calc.) = 5.8

Optical Properties: Semitransparent. *Color:* Brown to orange. *Streak:* Saffron-yellow.

Luster: Resinous.

Optical Class: Biaxial. *Pleochroism:* On (100), brownish orange || elongation; yellow-orange ⊥ elongation. *Orientation:* Extinction 5° ∧ elongation. α = 2.25–2.30 β = n.d. γ = 2.40–2.50
 2V(meas.) = Very large.

Cell Data: *Space Group:* P1 (probable). a = 9.57 b = 11.42 c = 10.84 α = 120°23'
 β = 92°27' γ = 56°6' Z = [1]

X-ray Powder Pattern: Sébarz mine, Iran.

3.60 (10), 3.49 (10), 3.28 (10), 3.18 (10), 3.08 (10), 4.84 (8), 4.42 (8)

Chemistry:	(1)	(2)	(3)	(4)
SiO ₂			3.9	3.94
CrO ₃	28.8		20.1	19.65
CuO		1.85	2.8	2.60
ZnO		0.58	2.4	
PbO	66.2		72.7	73.09
F				1.24
H ₂ O ⁺				
–O = F ₂				0.52
Total			101.9	100.00

(1) Sébarz mine, Iran; by electron microprobe, partial analysis. (2) Seh-Changi mine, Iran; partial analysis. (3) Tchah Khuni mine, Iran; by electron microprobe. (4) Pb₁₀Cu(CrO₄)₆(SiO₄)₂F₂.

Polymorphism & Series: Forms a series with hemihedrite.

Occurrence: In the oxidized portions of lead-bearing hydrothermal veins.

Association: Diopside, fornicite, wulfenite, mimetite, cerussite, diableite.

Distribution: In Iran, from the Sébarz and Tchah Khuni mines, Anarak district; in the Seh-Changi mine, near Neyband, Khorassan. From the Mammoth-St. Anthony mine, Tiger, Pinal Co., Arizona, and the Bozo #1 mine, Skull Creek, Moffat Co., Colorado, USA.

Name: For the country of first occurrence, Iran.

Type Material: University of Pierre and Marie Curie, Paris; National School of Mines, Paris, France; The Natural History Museum, London, England, 1969,52.

References: (1) Bariand, P. and P. Herpin (1963) Une nouvelle espèce minérale: l'iranite, chromate hydraté de plomb. Bull. Soc. fr. Minéral., 86, 133–135 (in French). (2) (1963) Amer. Mineral., 48, 1417 (abs. ref. 1). (3) Adib, D., J. Ottemann, and B. Nuber (1972) Further data on khuniite [iranite-hemihedrite] from the Tschah Khuni mine, Anarak, Iran. Neues Jahrb. Mineral., Monatsh., 328–335. (4) Williams, S.A. (1974) The naturally occurring chromates of lead. Bull. British Museum (Nat. Hist.) Mineral. 2, 377–419. (5) (1976) Amer. Mineral., 61, 186 (abs. ref. 4). (6) Bariand, P. and J.F. Poullen (1980) Rare chromates from Seh-Changi, Iran. Mineral. Record, 11, 293–297. (7) Cesbron, F. and S.A. Williams (1980) Iranite-hémihédrite, bellite, phoenicochroite, vauquelinite et fornicite: synthèse et nouvelles données. Bull. Minéral., 103, 469–477.

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