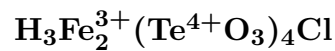


# Rodalquilarite



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**Crystal Data:** Triclinic. *Point Group:*  $\bar{1}$ . Stout crystals, to 2.5 cm; commonly in crusts.

**Physical Properties:** *Cleavage:* One, good. *Tenacity:* Very brittle. *Hardness* = 2–3  
D(meas.) = 4.97–5.15 D(calc.) = 5.08–5.14

**Optical Properties:** Semitransparent. *Color:* Grass-green, emerald-green, oil-green, pistachio-green, yellow-green; green in transmitted light. *Streak:* Greenish yellow.

*Luster:* Greasy.

*Optical Class:* Biaxial (-).  $n = \sim 2.2$   $\alpha = \text{n.d.}$   $\beta = \text{n.d.}$   $\gamma = \text{n.d.}$   $2V(\text{meas.}) = 38(5)^\circ$

**Cell Data:** *Space Group:*  $P\bar{1}$ .  $a = 8.89\text{--}9.00$   $b = 5.08\text{--}5.10$   $c = 6.63\text{--}6.64$   
 $\alpha = 103^\circ 10'\text{--}103^\circ 22'$   $\beta = 106^\circ 38'\text{--}107^\circ 05'$   $\gamma = 77^\circ 52'\text{--}78^\circ 4'$   $Z = 1$

**X-ray Powder Pattern:** Rodalquilar, Spain.

4.24 (FFF), 2.62 (FF), 3.31 (F), 2.17 (F), 2.85 (mF), 2.97 (m), 1.873 (mf)

## Chemistry:

	(1)	(2)	(3)
TeO <sub>2</sub>	72.85	73.36	74.88
Fe <sub>2</sub> O <sub>3</sub>	18.45	18.59	18.73
Cl	4.80	3.98	4.16
H <sub>2</sub> O	4.50	3.34	3.17
insol.	0.35		
-O = Cl <sub>2</sub>	1.08	0.90	0.94
Total	99.87	98.37	100.00

(1) Rodalquilar, Spain; by microanalysis, corresponds to  $\text{H}_{3.07}\text{Fe}_{2.00}(\text{TeO}_3)_{3.95}\text{Cl}_{1.17} \cdot 1.25\text{H}_2\text{O}$ .

(2) Tombstone, Arizona, USA; by microanalysis. (3)  $\text{H}_3\text{Fe}_2(\text{TeO}_3)_4\text{Cl}$ .

**Occurrence:** A rare secondary mineral formed in the zone of oxidation of tellurium-bearing precious metal deposits.

**Association:** Emmonsite, gold, alunite, jarosite, quartz (Rodalquilar, Spain); tellurium, mackayite, emmonsite (near El Indio, Chile); emmonsite, sonoraite (Joe mine, Arizona, USA).

**Distribution:** From the Rodalquilar gold deposit, Almería Province, Spain. In the Wendy open pit, El Indio-Tambo district, east of La Serena, Coquimbo, Chile. At the Joe and Grand Central mines, Tombstone, Cochise Co., Arizona, USA.

**Name:** For its first-noted occurrence at Rodalquilar, Spain.

**Type Material:** Natural History Museum, Paris; National School of Mines, Paris, France.

**References:** (1) Sierra Lopez, J., G. Leal, R. Perriot, Y. Laurent, J. Protas, and Y. Dusausoy (1968) La rodalquilarite, chlorotellurite de fer, une nouvelle espèce minérale. Bull. Minéral., 91, 28–33 (in French with English abs.). (2) (1968) Amer. Mineral., 53, 2104–2105 (abs. ref. 1). (3) Dusausoy, Y. and J. Protas (1969) Détermination et étude de la structure cristalline de la rodalquilarite, chlorotellurite acide de fer. Acta Cryst., 25, 1551–1558 (in French with English abs.). (4) Williams, S.A. (1980) The Tombstone District, Cochise County, Arizona. Mineral. Record, 11, 251–257.