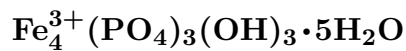


# Tinticite



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**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ ,  $m$ , or  $2$ . As thick claylike coatings or fine-grained massive nodules, composed of platy crystals, to  $1.5 \mu\text{m}$ .

**Physical Properties:** Hardness =  $\sim 2.5$  D(meas.) = 2.8–2.94 D(calc.) = 2.97

**Optical Properties:** Semitransparent. *Color:* Creamy white with yellowish or brownish tint, may be bright ocher-yellow. *Luster:* Dull.

*Optical Class:* Biaxial.  $n = 1.745$

**Cell Data:** *Space Group:*  $P2/m$ ,  $Pm$ , or  $P2$ .  $a = 13.65(1)$   $b = 6.542(5)$   $c = 12.31(1)$   
 $\beta = 91.2(1)^\circ$   $Z = 3$

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

3.307 (100), 3.950 (95), 3.027 (95), 2.984 (60), 4.604 (40), 2.361 (40), 1.946 (40)

## Chemistry:

	(1)	(2)	(3)
SO <sub>3</sub>	0.71		
P <sub>2</sub> O <sub>5</sub>	30.21	29.4	32.79
V <sub>2</sub> O <sub>5</sub>		4.0	
Fe <sub>2</sub> O <sub>3</sub>	49.28	48.9	49.18
H <sub>2</sub> O <sup>+</sup>	17.21		
H <sub>2</sub> O <sup>-</sup>	1.72		
H <sub>2</sub> O		17.9	18.03
Total	99.13	100.2	100.00

(1) East Tintic district, Utah, USA. (2) Bruguers, Spain; corresponds to  $\text{Fe}_4[(\text{PO}_4)_{2.70}(\text{VO}_4)_{0.30}]_{\Sigma=3.00}(\text{OH})_3 \cdot 5\text{H}_2\text{O}$ . (3)  $\text{Fe}_4(\text{PO}_4)_3(\text{OH})_3 \cdot 5\text{H}_2\text{O}$ .

**Occurrence:** Formed by reaction between phosphatic solutions derived from bat guano and iron from oxidizing pyrite (East Tintic district, Utah, USA); formed by weathering rocks containing apatite and jarosite (Bruguers, Spain).

**Association:** Jarosite, “limonite” (East Tintic district, Utah, USA); montgomeryite, carbonate-apatite, goethite (Bruguers, Spain).

**Distribution:** In the USA, found in a limestone cave near the Tintic Standard mine, near Dividend, East Tintic district, Utah Co., Utah; in the Gold Quarry mine, near Carlin, Maggie Creek district, Eureka Co., Nevada; in the Foote mine, near Kings Mountain, Cleveland Co., North Carolina. From Bruguers, 15 km southwest of Barcelona, Barcelona Province, Spain. At the Leveäniemi mine, Svappavaara, near Kiruna, Sweden. From Hagendorf, Bavaria, and in the Clara Mine, near Oberwolfach, Black Forest, Germany. In an unspecified gold deposit, central Kyzylkum, Uzbekistan. At the Mocolta phosphate quarry, northeast of Angaston, South Australia. From the Suwa mine, Nagano Prefecture, Japan.

**Name:** For its initially noted occurrence in the East Tintic district, Utah, USA.

**Type Material:** The Natural History Museum, London, England, 1986,61; National Museum of Natural History, Washington, D.C., USA, 105407, 105609.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana’s system of mineralogy, (7th edition), v. II, 970–971. (2) Melgarejo, J.C., S. Galí, and C. Ayora (1988) Tinticite: new structural and chemical data. Neues Jahrb. Mineral., Monatsh., 446–453.