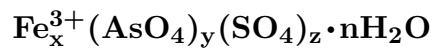


Pitticite



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Crystal Data: Amorphous. *Point Group:* n.d. Always massive, gellike, typically reniform, botryoidal, stalactitic, in thin opaline crusts, crazed and crackled when dry; earthy.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle when opaline. Hardness = 2–3
D(meas.) = 2.2–2.5 D(calc.) = n.d.

Optical Properties: Transparent to opaque. *Color:* Reddish brown, yellowish brown, brownish red to brownish black; yellow, gray to nearly white; may exhibit deep red internal reflections.

Streak: Yellow to white. *Luster:* Waxy, vitreous, greasy, may be dull, earthy.

Optical Class: Isotropic. $n = 1.616\text{--}1.66$

Cell Data: *Space Group:* n.d. $Z = \text{n.d.}$

X-ray Powder Pattern: Amorphous to X-rays.

Chemistry:	(1)	(2)
SO ₃	7.28 – 17.97	6.1 – 16.5
P ₂ O ₅	0.00 – 1.27	0.0 – 3.4
As ₂ O ₅	14.54 – 33.99	13.0 – 39.9
SiO ₂		0.0 – 0.1
Al ₂ O ₃		0.2 – 1.3
Fe ₂ O ₃	32.54 – 34.85	28.8 – 38.2
ZnO		0.3 – 0.4
MgO		0.2 – 0.7
CaO		0.1 – 0.2
H ₂ O ⁺		12.07 – 13.91
H ₂ O ⁻		12.05 – 13.10
H ₂ O	24.54 – 29.64	
Total	99.34 – 100.40	96.9 – 104.6

(1) Five localities; by wet methods, ranges. (2) Seven localities; by electron microprobe, ranges, H₂O by the Penfield method.

Occurrence: A late secondary mineral typically formed by oxidation of earlier arsenic-bearing species; may be deposited from mine and spring waters.

Association: Haidingerite, pharmacolite, pharmacosiderite, diadochite, scorodite, erythrite, melanterite, gypsum, alunite, “limonite”.

Distribution: In Germany, from Freiberg, Schneeberg, Schwarzenberg, Marienberg, Johanngeorgenstadt, and other districts in Saxony; at St. Andreasberg, Harz Mountains. From Jáchymov (Jochimsthal), at Příbram, and near Kaňk, Kutná Hora district, Czech Republic. In England, in Cornwall, at Wheal Sparnon, Redruth; the Penberthy Croft mine, St. Hilary; the Botallack mine, St. Just; the Dolcoath mine, Camborne, Cornwall. In the USA, in the Tintic district, Juab Co., Utah; at the White Caps mine, Manhattan district, Nye Co., Nevada; from Sterling Hill, Ogdensburg, Sussex Co., New Jersey. At Djebel Debar, Algeria. A number of other localities are suggested for this poorly-defined species.

Name: From the Greek for *pitch*, for its typical resinous appearance.

Type Material: Mining Academy, Freiberg, Germany, 21860.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 1014–1015. (2) Dunn, P.J. (1983) New data for pitticite and a second occurrence of yukonite at Sterling Hill, New Jersey. *Mineral. Mag.*, 46, 261–264.

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