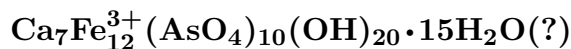


# Yukonite



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**Crystal Data:** Amorphous, gellike to very poorly crystalline. *Point Group:* n.d.  
As irregular concretionary masses, typically strongly cracked.

**Physical Properties:** *Fracture:* Smooth to conchoidal. *Tenacity:* Extremely brittle.  
Hardness = 2–3 D(meas.) = 2.65; 2.86 after gas evolution. D(calc.) = n.d. May decrepitate  
when fresh, on exposure to air, H<sub>2</sub>O, or warmth, with evolution of primarily CO<sub>2</sub>.

**Optical Properties:** Translucent. *Color:* Dark brown, brownish black, violet to deep  
blood-red; in thin splinters, deep brown, yellowish brown, reddish purple. *Streak:* Brownish  
yellow. *Luster:* Vitreous to resinous.  
*Optical Class:* Isotropic. *n* = n.d.

**Cell Data:** *Space Group:* n.d. *Z* = n.d.

**X-ray Powder Pattern:** Tagish Lake, Canada.

14.1 (100), 2.79 (60), 3.25 (57), 5.58 (37), 2.61 (20), 1.63 (20), 2.24 (11)

Chemistry:	(1)	(2)	(3)		(1)	(2)	(3)
SO <sub>3</sub>		0.12		ZnO		0.56	
P <sub>2</sub> O <sub>5</sub>		0.22		MgO		0.41	
As <sub>2</sub> O <sub>5</sub>	36.3	39.68	38.95	CaO	10.6	12.86	13.30
SiO <sub>2</sub>		0.21		H <sub>2</sub> O <sup>+</sup>		[5.22]	
Fe <sub>2</sub> O <sub>3</sub>	36.6	30.25	32.48	H <sub>2</sub> O <sup>−</sup>		[10.03]	
MnO		0.44		H <sub>2</sub> O	17.9		15.27
				Total	101.4	[100.00]	100.00

(1) Tagish Lake, Canada; by electron microprobe, total Fe as Fe<sub>2</sub>O<sub>3</sub>, H<sub>2</sub>O by TGA.

(2) Rędziny, Poland; by electron microprobe, total Fe as Fe<sub>2</sub>O<sub>3</sub>, H<sub>2</sub>O calculated for charge  
balance; corresponds to (Ca<sub>6.48</sub>Mg<sub>0.29</sub>Zn<sub>0.19</sub>Mn<sub>0.17</sub>)<sub>Σ=7.13</sub>Fe<sub>10.70</sub>[(AsO<sub>4</sub>)<sub>9.75</sub>(SiO<sub>4</sub>)<sub>0.10</sub>  
(PO<sub>4</sub>)<sub>0.09</sub>(SO<sub>4</sub>)<sub>0.04</sub>]<sub>Σ=9.98</sub>(OH)<sub>16.37</sub>•15.72H<sub>2</sub>O. (3) Ca<sub>7</sub>Fe<sub>12</sub>(AsO<sub>4</sub>)<sub>10</sub>(OH)<sub>20</sub>•15H<sub>2</sub>O.

**Occurrence:** A secondary mineral typically altered from arsenopyrite.

**Association:** Symplectite, argentian galena, pyrrargyrite, argentite, chalcopyrite, arsenopyrite,  
quartz (Tagish Lake, Canada); parasymplectite, köttigite, ogdensburgite, pharmacosiderite,  
legrandite, willemite, franklinite, sphalerite (Sterling Hill, New Jersey, USA); arsenopyrite,  
arsenosiderite, arsenolite, barian pharmacosiderite (Trout Creek, Colorado, USA); arsenopyrite,  
pharmacosiderite (Rędziny, Poland).

**Distribution:** Found on the west side of Windy Arm, Tagish Lake, Yukon Territory, Canada.  
In the USA, from Sterling Hill, Ogdensburg, Sussex Co., New Jersey, and the Crystal No. 8 mine,  
Trout Creek pegmatites, Chaffee Co., Colorado. In Germany, from Saalfeld, Thuringia; at Graulau  
mountain, near Lammersdorf, Eifel district; from Hasseroode, near Wernigerode, Harz Mountains;  
and at Heubachtal, Black Forest. From Rędziny, Poland.

**Name:** For Yukon Territory, Canada, within which the mineral was first found.

**Type Material:** The Natural History Museum, London, England, 1916,454; Geological Survey  
of Canada, Ottawa, 18594; Royal Ontario Museum, Toronto, Canada, M11468; National Museum  
of Natural History, Washington, D.C., USA, R5783.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy,  
(7th edition), v. II, 953–955 [arsenosiderite, part]. (2) Tyrrell, J.B. and R.P.D. Graham (1913)  
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(3) Dunn, P.J. (1982) New data for pitticite and a second occurrence of yukonite at Sterling Hill,  
New Jersey. Mineral. Mag., 46, 261–264. (4) Pieczka, A., B. Gołębiewska, and W. Franus (1998)  
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(5) Ross, D.R. and J.E. Post (1997) New data on yukonite. Powder Diffraction, 12, 113–116.

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