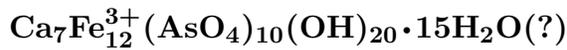


Yukonite

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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, H₂O, or warmth, with evolution of primarily CO₂.

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 ₃ | | 0.12 | | ZnO | | 0.56 | |
| P ₂ O ₅ | | 0.22 | | MgO | | 0.41 | |
| As ₂ O ₅ | 36.3 | 39.68 | 38.95 | CaO | 10.6 | 12.86 | 13.30 |
| SiO ₂ | | 0.21 | | H ₂ O ⁺ | | [5.22] | |
| Fe ₂ O ₃ | 36.6 | 30.25 | 32.48 | H ₂ O ⁻ | | [10.03] | |
| MnO | | 0.44 | | H ₂ O | 17.9 | | 15.27 |
| | | | | Total | 101.4 | [100.00] | 100.00 |

(1) Tagish Lake, Canada; by electron microprobe, total Fe as Fe₂O₃, H₂O by TGA.

(2) Rędziny, Poland; by electron microprobe, total Fe as Fe₂O₃, H₂O calculated for charge
balance; corresponds to (Ca_{6.48}Mg_{0.29}Zn_{0.19}Mn_{0.17})_{Σ=7.13}Fe_{10.70}[(AsO₄)_{9.75}(SiO₄)_{0.10}
(PO₄)_{0.09}(SO₄)_{0.04}]_{Σ=9.98}(OH)_{16.37} • 15.72H₂O. (3) Ca₇Fe₁₂(AsO₄)₁₀(OH)₂₀ • 15H₂O.

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 Hasserode, 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.

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(7th edition), v. II, 953–955 [arsenosiderite, part]. (2) Tyrrell, J.B. and R.P.D. Graham (1913)
Yukonite, a new hydrous arsenate of iron and calcium, from the Tagish Lake, Yukon Territory,
Canada; with a note on the associated symplectite. Trans. Roy. Soc. Canada, 7(IV), 3, 13–18.
(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. Gołębiowska, and W. Franus (1998)
Yukonite, a rare Ca-Fe arsenate, from Rędziny (Sudetes, Poland). Eur. J. Mineral., 10, 1367–1370.
(5) Ross, D.R. and J.E. Post (1997) New data on yukonite. Powder Diffraction, 12, 113–116.

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