Gabrielsonite $PbFe^{2+}(AsO_4)(OH)$

Crystal Data: Orthorhombic. *Point Group:* $mm2$. As crude rounded crystals, in aggregates, and in massive lumps, to 1 cm.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Very brittle. Hardness = 3.5 D(meas.) = 6.67 D(calc.) = 6.69

Optical Properties: Transparent in small fragments. *Color:* Black; greenish brown in transmitted light. *Streak:* Pale chocolate-brown. *Luster:* Adamantine. *Optical Class:* Biaxial (–); very high birefringence. *Pleochroism:* Strong; $X = Z$ = olive-green; Y = red-brown. *Dispersion:* $r < v$, perceptible. *Absorption:* $Y > X = Z$. $n = > 2.00$ 2V(meas.) = 80°–90°

Cell Data: *Space Group:* $P2_1ma$. $a = 7.86(1)$ $b = 5.98(1)$ $c = 8.62(1)$ Z = 4

X-ray Powder Pattern: Långban, Sweden.
3.192 (10), 3.074 (10), 2.706 (4), 2.651 (4), 1.622 (4), 1.4380 (4), 1.0878 (4)

Chemistry:

	(1)	(2)
As_2O_5	28.54	27.43
Fe_2O_3	0.00	
FeO	18.47	17.15
PbO	50.09	53.27
H_2O	1.21	2.15
Total	98.31	100.00

(1) Långban, Sweden; corresponds to $(Pb_{0.90}Fe_{0.07})_{\Sigma=0.97}Fe_{0.97}(AsO_4)(OH)_{0.55}O_{0.12}$.
(2) $PbFe(AsO_4)(OH)$.

Mineral Group: Adelite group.

Occurrence: In a metamorphosed Fe–Mn orebody.

Association: Roméite, nadorite, finnemanite, calcite, barite.

Distribution: From Långban, Värmland, Sweden.

Name: To honor Dr. Olof Erik Gabrielson (1912–), mineralogist, Swedish Museum of Natural History, Stockholm, Sweden.

Type Material: Swedish Museum of Natural History, Stockholm, Sweden, NRMS 254857; National Museum of Natural History, Washington, D.C., USA, 120063, 162613.

References: (1) Moore, P.B. (1967) Gabrielsonite, $PbFe(AsO_4)(OH)$, a new member of the descloizite-pyrobelonite group, from Långban. Arkiv. Mineral. Geol., 4, 401–405. (2) (1968) Amer. Mineral., 53, 1063–1064 (abs. ref. 1).