Langhofite $Pb_2(OH)[WO_4(OH)]$

Crystal Data: Triclinic. *Point Group*: $\bar{1}$. In euhedral crystals elongated along [100], to 4 mm, and striated lengthwise.

Physical Properties: Cleavage: Perfect on {010} and {100}, producing rhombic fragments. *Tenacity*: Brittle. *Fracture*: Uneven, splintery. Hardness = 2.5-3
VHN = 130-192, 157 average (25 g load). D(meas.) = n.d. D(calc.) = 7.95(1) Nonfluorescent.

Optical Properties: Transparent. *Color*: Colorless to white. *Streak*: White. *Luster*: Adamantine. *Optical Class*: Biaxial (+). *n*(calc.) = 2.20 Non-pleochroic.
R_1-R_2: (470) 13.80-14.6, (546) 13.2-14.0, (589) 13.0-13.7, (650) 12.8-13.5

Cell Data: *Space Group*: $P\bar{1}$. a = 6.6154(1) b = 7.0766(1) c = 7.3296(1) α = 118.175(2)° β = 94.451(1)° γ = 101.146(1)° Z = 2

X-ray Powder Pattern: Långban deposit, Filipstad district, Värmland, Sweden.
3.016 (100), 6.04 (24), 3.079 (24), 3.259 (22), 2.053 (20), 3.181 (19), 2.050 (18)

Chemistry:

	(1)	(2)
PbO	63.51	64.11
WO_3	32.01	33.30
H_2O	[2.52]	2.59
Total	98.04	100.00

(1) Långban deposit, Filipstad district, Värmland, Sweden; average electron microprobe, FTIR and Raman spectroscopic analyses; corresponds to $Pb_{2.03}W_{0.99}O_4(OH)_2$. (2) $Pb_2(OH)[WO_4(OH)]$.

Occurrence: In a vug in hematite-pyroxene skarn in a metamorphosed, carbonate-hosted, syngenetic Långban-type, Fe-Mn-(Ba-As-Pb-Sb-W-Be-B) deposit.

Association: Calcite, baryte, fluorapatite, mimetite, galena, covellite, chalcocite.

Distribution: From the Långban deposit, Filipstad district, Värmland, Sweden.

Name: Honors curator H. Jörgen S. *Langhof* (b. 1965), Swedish Museum of Natural History, who collected the discovery sample.

Type Material: Department of Geosciences, Swedish Museum of Natural History, Stockholm, Sweden (GEO-NRM #20030044).

References: (1) Holtstam, D., F. Cámara, and A. Karlsson (2020) Langhofite, $Pb_2(OH)[WO_4(OH)]$, a new mineral from Långban, Sweden. Mineral. Mag., 84, 381-389.