Mallestigite $Pb_3Sb(SO_4)(AsO_4)(OH)_6 \cdot 3H_2O$

Crystal Data: Hexagonal. *Point Group: 6.* Crystals prismatic, elongated along [001], showing {100} and {101}, to 2 mm; also as radial aggregates to 3 mm.

Physical Properties: *Cleavage:* None observed. *Fracture:* Splintery. *Tenacity:* Brittle. VHN = 176 (10 g load). Hardness = 4 D(meas.) = n.d. D(calc.) = 4.91

Optical Properties: Transparent to translucent. *Color:* Colorless. *Streak:* White. *Luster:* Adamantine.
Optical Class: Uniaxial (+). $\omega = 1.760(4)$ $\varepsilon = 1.801(4)$

Cell Data: *Space Group: $P6_3$.* $a = 8.938$ $c = 11.098$ $Z = 2$

X-ray Powder Pattern: Mallisteger Mattagskogel, Austria.
3.655 (100), 3.48 (80), 2.675 (62), 6.35 (44), 2.235 (35), 3.175 (31), 7.74 (25)

Chemistry:

	(1)
SO_3	8.64
Sb_2O_5	14.68
As_2O_5	9.71
PbO	65.67
$H_2O_{(calc)}$	[10.38]
Total	109.08

(1) Mallisteger Mattagskogel, Corinthia, Austria; average of 14 electron microprobe analyses, H_2O calculated, corresponding to $Pb_{3.06}Sb_{0.95}[(SO_4)_{1.12}(AsO_4)_{0.88}]_{\sum=2.0}(OH)_{5.99} \cdot 3.01H_2O$.

Mineral Group: The Sb analog of fleischerite.

Occurrence: A rare secondary mineral in the oxidized zone of a hydrothermal polymetallic base-metal deposit containing galena and tetrahedrite (Austria); in weathered metallic slag (Hartz Mountains, Germany).

Association: Anglesite, brochantite, langite, linarite, and schultenite.

Distribution: From the dumps of an ancient Cu-Pb-Zn mine near Mallisteger Mattagskogel, Corinthia, Austria; in slag, Hartz Mountains, Germany.

Name: For the town near the dumps from where the mineral was first noted.

Type Material: Not mentioned.

References: (1) Sima, I. (1998) Mallestigite, $Pb_3Sb(SO_4)(AsO_4)(OH)_6 \cdot 3H_2O$, a new mineral from a dump of a former Cu-Pb-Zn mine northwest of the Mallisteger Mattagskogel in Westkarawanken, Corinthia, Austria. Mitteil. Österr. Mineral. Ges., 143, 225–227 (in German). (2) (2004) Amer. Mineral., 89, 1830 (abs. ref. 1). (3) (2003) Can. Mineral., 41, 1314 (abs. ref. 1).