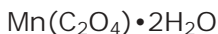


Lindbergite



MONOCLINIC

Locality: In the Lavra da Boca Rica granite pegmatite, Sapucaia do Norte, Galiléa County, Minas Gerais, Brazil. In addition to the type locality, the mineral has been found at the following localities: Parsettens, Grisons, Switzerland; Lecht mines, Banffshire, Scotland, UK; Morefield pegmatite, Amelia, Virginia, USA; Clara mine, Oberwolfach, Wolfach Valley, Baden-Württemberg, Germany; Ortenberg near Offenburg, Germany; and Gremmelsbach near Triberg, Germany. A natural origin has not been established for the last locality.

Occurrence: Associated minerals are: triphylite, phosphosiderite, frondelite, strengite, cyrilovite, bermanite, rockbridgeite, huréaulite, tavorite, reddingite, heterosite, laeuite and unidentified minerals.

General appearance: Short prismatic crystals 0.1 to 0.3 mm long and aggregates 0.1 mm thick made up of interlocking platelets up to 0.03 mm long.

Physical, chemical and crystallographic properties: *Luster:* vitreous. *Diaphaneity:* transparent. *Color:* white to greyish white. *Streak:* white. *Luminescence:* nonfluorescent. *Hardness:* 2½. *Tenacity:* crumbly. *Cleavage:* {010} perfect. *Fracture:* not given. *Density:* 2.10 g/cm³ (meas.), 2.30 g/cm³ (calc.). **Crystallography:** Monoclinic, *C2/c*, *a* 11.995, *b* 5.632, *c* 9.967 Å, β 128.34°, *V* 528.1 Å³, *Z* = 4, *a:b:c* = 2.1298:1:1.7697. *Morphology:* {100}, {*hk*0}, {010}, {0*kl*}. *Twinning:* on (010). The forms noted here are interpreted as being the result of pseudomorphs after the trihydrate, Mn(C₂O₄)•3H₂O. **X-ray powder-diffraction data:** 4.855(26)($\bar{1}$ 11), 4.803(100)(202), 4.699(84)(200), 3.907(23)(002), 3.622(22)(111), 2.996(58)(402), 2.679(14)($\bar{1}$ 13), 2.652(12)(112). **Optical data:** Biaxial (–), α 1.424, β 1.550, γ 1.65, 2*V*(meas.) 80°, 2*V*(calc.) 77°; dispersion not detectable or *r* > *v*, very weak; nonpleochroic; *Y*∧*c* = 20°. **Chemical analytical data:** Mean of ten sets of electron-microprobe data (C₂O₃ and H₂O by CHN analyzer): Na₂O 0.21, MnO 39.99, Al₂O₃ 0.24, C₂O₃ 34.90, H₂O 19.62, Total 94.96 wt.%. Empirical formula: (Mn_{1.09}Na_{0.01}Al_{0.01})Σ1.11 (C_{1.87}O_{3.90})•2.10H₂O. **Relationship to other species:** It is the Mn-dominant member of the humboldtine group.

Name: After Marie Louise Lindberg (b. 1918), of the United States Geological Survey. She described the following new species from the nearby Sapucaia quarry: frondelite, faheyite, moraesite, barbosalite and tavorite.

Comments: IMA No. 2003–029.

ATENCIO, D., COUTINHO, J.M.V., GRAESER, S., MATIOLI, P.A. & MENEZES, L.A.D., JR. (2004): Lindbergite, a new Mn oxalate dihydrate from Boca Rica mine, Galiléa, Minas Gerais, Brazil. *American Mineralogist* **89**, 1087-1091.